

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. XLIX.

SATURDAY, AUGUST 28, 1886.

No. 9.

ORIGINAL LECTURES.

SURGICAL LESIONS OF THE BRAIN AND ITS ENVELOPES.

*A Lecture delivered at the College of Physicians and Surgeons,
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GENTLEMEN: I shall call your attention to-day to an extremely important subject, the surgical diseases of the brain and its envelopes—lesions attributable directly to traumatism and the consecutive lesions following injury to the skull, the brain, and its envelopes. You will recognize the importance of secondary lesions of the envelopes if I call your attention to the fact that any lesion of the meninges is liable to extend to the brain substance proper by continuity of the inflammatory process, or may prove fatal by compression of the brain by the products of inflammation, which takes place on account of the unyielding character of the cranial vault. I wish you to remember that wounds of the brain, both incised and contused, may heal and cicatrize in a manner similar to that noted after injuries of other organs; in this respect we differ with the older authorities, who believed that injuries of the brain substance proper were incapable of repair; a loss of continuity in the brain substance proper which does not suspend an essential function may be followed by cicatrization and complete repair, and the organ may be restored to its functional integrity, provided, however, that the injury is unattended by consecutive traumatic infection, and consequently unattended by secondary inflammatory lesions; in other words, the loss of substance is replaced by a reconstructive process from the normal histological elements of the brain initiated by the traumatism.

About thirty years ago an eminent German physiologist (Wagner) made a series of experiments to ascertain the capacity of the brain to repair itself, and with another view to ascertain the physiological function of different portions of the brain. He found on removing sections of different portions of the organ that the operation, as a rule, was not followed by a process of destructive inflammation—that cicatrization was established in the same manner as when the injury is inflicted upon some other organ of less physiological importance. He not only found that wounds of the brain healed, but at the point of injury loss of brain substance was liable to occur as a result of consecutive cicatricial contraction without causing serious functional impairment. He ascertained this fact by a series of experiments, weighing different portions of the brain before and after the injury so accurately as to find the fraction of a milligramme of difference. Again, you will remember the classical case reported by Bigelow, of Boston, in 1855,

where a crowbar passed through the brain substance, entering the skull from below upward, producing not only a great loss of brain substance, but contusion of the adjacent portions—a condition which must of necessity result in extensive cicatricial contraction during the reparative process. If, as was here the case, no loss of function occurred after the wound had healed, you can readily imagine that even an extensive loss of brain tissue does not necessarily interfere with the normal physiological functions of the brain if the injury is not followed by a secondary destructive process.

In introducing the subject of surgical lesions of the brain as they follow injuries of the cranium or its contents, it is necessary for a moment to direct your attention to those rare affections which occasionally follow incomplete fractures of the skull. By such an injury I mean a contusion affecting the cancellated structure between the external and internal table of the cranial bones; an indentation of one or more of the cranial bones by external violence, which is subsequently restored by means of the elasticity of the bones, assisted by the intracranial pressure, but resulting in compression of the cancellated tissue between the tables. It is a form of incomplete fracture as we observe it in the skull, the result of compression, which produces a condensation of the cancellated tissue, but does not affect the external or the internal table, an injury not recognizable by external signs, because the external table is smooth, while the internal table has a sufficient amount of elasticity to restore the normal relation of the parts though the diploë be crushed. It is a partial crushing of the diploë structure, the result of force applied from without, as I have previously informed you, and which may temporarily indent the skull to the extent of even half an inch without producing fracture of the compact layers of the bone. This variety of fracture can only be recognized by evidences resulting from extravasation of blood, and ecchymosis at the point of injury, and by the immediate effects of the injury upon the functions of the brain. Its existence is also suggested a certain length of time after the injury has been received by a consecutive formative periostitis—a periostitis induced directly by the traumatism, resulting in the production of new bone, provided no infection has taken place at the seat of injury.

It is important to remember this form of injury from the fact that occasionally we meet with cases of injury of the cranial bones subsequently followed by serious brain disease, the secondary brain lesion being the direct result of the local injury in the diploë; an injury producing, in the first place, a laceration of the small veins in the diploë followed by thrombosis, the thrombus acting as a favorable culture soil for germs that may be accidentally introduced from a slight abrasion, resulting in an osteomyelitis—the osteomyelitis, again, extending by means of the consecutive thrombophlebitis to the subjacent meninges and to the brain itself. These remarks should teach you simply this fact: that all in-

juries of the skull, even when apparently slight, should put you on your guard with reference to the management of the case. Even a comparatively slight contusion of the cranial vault may be followed by a complexus of symptoms indicative of a grave central lesion. It is on this account that such injuries, slight as they may appear, should receive most careful treatment. This should have for its aim the prevention of secondary lesions; consequently, it must be directed toward the prevention of the inflammatory processes in the bone, and their extension to the brain and its envelopes. Rest in the elevated position, and cold applications are the measures upon which you rely, in the first place, to prevent an undue local inflammation, and if evidences of osteomyelitis appear, as evidenced by the appearance of fever, pain at the seat of injury, local oedema, then resort to early operative measures to reach the inflammatory focus, etc., before the infective thrombophlebitis has had time to extend to the subjacent brain tissue.

In speaking of traumatic meningitis, it is necessary to recognize two distinct varieties, the primary and the secondary. The classification introduced as early as the time of Ambrose Paré, and since recognized by all surgical authors, is this: A primary meningitis is that which is produced directly by traumatism following an injury within twenty-four to seventy-two hours; a secondary meningitis, on the other hand, is an inflammation of the meninges occurring an indefinite period of time after the local injury, but where the primary injury bears a direct etiological relation to the secondary lesion. When I call your attention to the causes which produce these two varieties, the distinction will appear plain to you. By a primary meningitis, I mean that form which results directly from an absorption of the products of putrefaction at the point of injury; a meningitis following a compound fracture of the skull, for instance, exposing the dura mater directly to infection. If the dura mater is exposed directly to the products of putrefaction, the septic germs penetrate the substance of the meninx proper, and the inflammation extends in a central direction *pari passu* with the invasion of the primary cause. The process begins at the point of injury, extends in all directions from a common central point toward the circumference, and in a central direction, by continuity and contiguity. By extension by continuity, I mean that the infective principle pervades the tissues of the dura mater, extending deeper and deeper, involving the subjacent envelopes, the arachnoid, and pia mater, and producing an inflammatory process in these membranes resembling in every respect the character of the inflammation in the dura mater, constituting the lepto-meningitis of recent pathologists. Again, extension takes place by contiguity of tissue, the pia mater being in close contact with the cortical layer of the brain the process extends from the meninges to the brain, so that we have a meningitis involving all of the meninges accompanied with an encephalitis, or a meningo-encephalitis, meaning an inflammation of all the meninges of the brain with inflammation of the subjacent brain tissue. Consequently, we again assert that, as in any other locality, a destructive inflammation of the meninges of the brain and the subjacent brain tissue following an injury is always to be considered as a direct result of traumatic infection or traumatism combined with infection from some antecedent pathological

product. *No infection, no meningitis. No infection, no encephalitis.*

By a primary meningitis, then, we mean that which is induced by primary infection. This is important in a practical sense, inasmuch as it will again remind you of the importance of resorting to thorough local disinfection in all cases of compound fracture of the skull in order to obviate a consecutive meningitis. It should impress upon you again the fact that when a fracture is once compound you necessarily make it more compound in the attempt to secure free drainage. If you have an indented fracture which will not permit of free drainage between the fragments, it is necessary to expose the meninges by removing portions of the detached bone, and if the bone is not detached, you should enlarge the opening by means of a bone forceps or chisel, not only for the purpose of resorting to thorough primary disinfection underneath the fractured bone, but also for the purpose of insuring free drainage subsequently. We observe the same rule in these instances as we do in all other serous cavities. An infective agent, once introduced, is beyond our control if it has permeated the tissues beneath; consequently, the larger the opening the freer the drainage; the better the access to the infected district, for the application of disinfecting agents, the better the results.

By a secondary meningitis of a traumatic origin, I mean that which may follow an injury of the skull or the superimposed soft tissues at some indefinite subsequent time.

Premising, again, that, as in cases of primary meningitis, the secondary form is due to the same infective cause, but that the infection has remained for a certain time latent, local, and has extended subsequently by the development of certain well-defined, local, pathological conditions—as, for instance, suppurative osteomyelitis, a condition to which I have previously alluded in cases of contusion of the cranial bones, as being the result of the introduction of specific germs which we have learned produce suppurative inflammation. This condition may not be apparent at first, but gradually, as the disease proceeds, it involves the adjacent veins, producing a thrombophlebitis in the diploë, the thrombus growing in a central direction until it reaches the meninges, where a similar suppurative process is initiated as at the primary seat of infection. It is a suppurative meningitis when the lesion is caused by the extension of suppurative inflammation from the exterior or as the result of a purulent thrombophlebitis. But the specific cause may have affected one of the large venous channels within the cranial vault producing a primary sinus-phlebitis, and the meningitis may be due to extension from this source. By this I mean an inflammation of the large venous sinuses in the cranial cavity, the result of extension of the inflammatory process from the local injury to a subjacent sinus. In considering this part of our subject you must remember the direct communication that exists between the external veins of the skull and diploë and the sinuses through the medium of connecting venous channels. If, for instance, we find we have to deal with only a local inflammation of an infective type, a furuncle, a suppurating wound of the soft parts, or an anthrax, and no fracture has existed, but a local infection has taken place in the soft tissues; if from this focus of infection a thrombophle-

bitis take place, the thrombus forms in the vein, growing by aggregation in a central direction, and gradually reaches the sinus, a thrombus is formed in the sinus, and its presence provokes an inflammation in the sinus itself producing a sinus-phlebitis. By direct contact with the sinus of the meninges the inflammation extends in all directions, producing an infective meningitis resembling, in its character and results, in every respect the primary inflammation in the sinus and in the superficial veins. Furthermore, the infection may have a still deeper origin, and may extend in a peripheral instead of in a central direction; in other words, the inflammatory primary disease may originate within the brain, the process affecting the meningeal membranes from the centre of the brain in a peripheral direction, hence a consecutive meningitis, following a primary encephalitis terminating in an encephalo-meningitis.

In alluding to the symptomatology of traumatic meningitis, the first symptom you will observe is a changed condition of the mind of the patient; a psychical perturbation due to hyperæmia of the superficial cortical substance of the brain, as this portion of the brain is predisposed by the anatomical arrangement of its structure to extension of the inflammatory process from the meninges. The perverted sensorium points to an increased, exaggerated physiological function as the result of increased tissue changes in the gray matter of the cortex, due to an increased vascularization of that portion of the brain, producing increased exaltation of the psychical functions of the brain. If you are called upon to treat this disease as we occasionally meet with it—after a compound fracture of the skull, for instance—the first thing you will notice on your visit is that your patient is contrary, peevish, morose; complains of every little thing; the least noise produces painful sensations. As the disease progresses, or as long as this exaltation in the psychical function of the brain increases, delirium follows—delirium sometimes of an active character; the patient even attempts to run away, jump out of the window, etc.; consequently, any serious change pointing toward a perverted sensorium in cases of compound fracture of the skull should receive your earnest and early attention. One of the first positive evidences of the existence of traumatic meningitis is an excruciating headache, referable at first to the primary seat of the inflammation, but as the process extends it becomes more diffuse. It is a headache which it is difficult to describe, but the words "excruciating" and "diffuse" are sufficient to indicate the character and extent of the local inflammation. It is a pain resulting from inflammation of a serous membrane dense in structure—a pain resulting from vascular engorgement and increased intracranial pressure. As a result of increased exaltation of the cerebral functions we very frequently observe convulsions; the area of peripheral irritation results in exaggeration of the motor function—convulsions general or local, as the case may be. If only one side of the brain is affected, the process is yet limited; in all probability the convulsive movements will occur on the opposite side. Again, if the process is limited to a particular sphere, involving the nerves supplying certain definite muscular groups, you observe a monospasm in the group of muscles supplied by the nerves which are irritated by the central disease.

Vomiting is an early symptom, and when persistent

denotes an acute and severe attack. Persistent vomiting, in the absence of mechanical obstruction or inflammatory affections of the digestive tract, should always awaken suspicion of the existence of cerebral disease. Cerebral vomiting is not the retching due to a disturbance of the digestive function, but a mechanical vomiting, so that in the absence of gastric disturbance, and the rapidity with which the attacks occur, you may suspect a central cause. The pulse, in the beginning of the disease, is always increased in frequency, say from 80 to 120, full and bounding, until the local disturbance has led to an increase in intracranial pressure, when it becomes slow, indicating in this connection compression of the brain. By a slow pulse I mean one that varies from 50 to 60 beats per minute. After a few days it again becomes rapid and feeble, being simply the forerunner of approaching dissolution, indicating a general paralysis, due to the central cause; although at first rapid, it has a natural tendency to become softer and smaller in volume, consequently the slowness following a rapid pulse is not a favorable, but a serious change. When it becomes more rapid and small, it is an indication that general paresis is occurring as one of the results of cerebral compression.

The temperature in meningitis is always increased—usually 100° to 104° F.—the temperature usually can be considered as an index of the intensity and extent of the infection. As in all other infectious traumatic diseases, an early high rise in temperature forebodes danger. It simply means that the infection has taken place rapidly and has become diffuse; that the local process has extended with great rapidity, involving at an early date a large surface of the meningeal structures. A paresis in cases of meningitis is always the result of secondary pathological changes produced by the local inflammation; by this I mean either an increase in intracranial pressure, resulting in cerebral compression and consequently a localized area of anæmia in the brain, or an extension of the inflammatory process to the brain and destruction of the centre of sensation or motion, as the case may be; a paralysis first localized, extending as the local cause spreads, affecting more distant structures; a paralysis indicating simply the extent of the cerebral injury or disease, primary or secondary, according to the pathological condition which characterizes the case. The pupils in meningitis are first, as a rule, contracted; in a few days they may be normal, but on testing their contractility you will always notice a slow response to light, which is one of the characteristic features of meningeal inflammation. As the disease progresses, and exudation takes place, and compression is produced, one pupil may be dilated and the other contracted. When cerebral compression is well marked, dilatation of both pupils takes place.

By pyæmia as a complication of traumatic meningitis, we understand the existence of distant or metastatic abscesses, resulting from disintegration of a thrombus in the sinus, or in the veins.

We have now arrived at an important pathological consideration of cerebral pathology. Strange as it may appear, ancient authorities have entertained the most diverse opinions in regard to the relations existing between a local suppuration and distant abscesses. For instance, the distinguished pathologist, Bichat, claimed

the existence of a peculiar sympathy between the brain and the liver; a sympathy which would come into activity in case of pathological conditions in the brain, producing similar conditions in the liver. Another writer claims that metastatic abscess of the liver is frequently a concomitant condition in cases of pyæmia from cerebral suppuration, and that the disease is first located in the liver, and subsequently extends from it to the brain. Recent pathological research has demonstrated that pyæmia in thrombophlebitis or sinus-phlebitis constitutes one of its greatest dangers, and on post-mortem examinations is found as one of the most frequent causes of death; the thrombus by disintegration will produce pyæmia just as when a thrombus forms in any other part of the body under similar circumstances, giving rise to embolism and metastatic abscesses. In cases of suppurative inflammation of the brain and its envelopes, the process is facilitated by the direct communication of the large reservoirs of the brain with the jugular veins, so that pyæmia, as we observe it in cases of thrombophlebitis or sinus-phlebitis means simply the coexistence of metastatic abscesses caused by embolism from disintegration of the infected thrombus.

In the differential diagnosis we must take into consideration concussion. Concussion may precede meningitis, and may complicate the clinical picture. Concussion following immediately after an injury, produces symptoms not referable to any particular portion of the brain, but a condition in the entire cerebrum resulting in partial suspension for the time being of its physiological functions; consequently, during the first twenty-four or forty-eight hours it is impossible to make a positive differential diagnosis. If, however, the symptoms prove more permanent; if concussion is followed by meningitis, there is no restoration of function *ad integrum*, as in uncomplicated cases of concussion, but the process proceeds and results in the manifestation of focal symptoms. Traumatic meningitis is distinguished from incipient encephalitis by the absence of symptoms indicating central irritation—symptoms expressive of exaltation of the cerebral functions, if the inflammatory process in the brain is not complicated by meningitis from the beginning. Again, encephalitis, at first primary and localized, gives rise to early focal symptoms; that is to say, symptoms pointing toward a distinct portion of the brain as the seat of the lesion. The local injury, if unattended by meningitis, again gives rise to focal symptoms from the very beginning, localizing the lesion in the brain, and an absence of those severe symptoms pointing to cerebral irritation, as we observe it in meningitis.

Abscess in the brain has quite a different clinical history: contusion, thrombophlebitis, sinus-phlebitis, cranial osteomyelitis preceding the formation of pus in the brain; it is also attended by focal symptoms, as evidenced by circumscribed regions of paralysis of certain definite muscular groups, pointing to the local lesion in the brain as the cause of the paralysis. Again, abscess of the brain is not attended by such a constant rise in temperature as is found in cases of traumatic meningitis—in fact, in many of the cases recorded the temperature has been noted as being subnormal.

It is impossible, in the beginning, to differentiate simple congestion from inflammation, inasmuch as inflammation is always preceded by congestion; but congestion

independent of inflammation is only a temporary condition yielding to local or general measures.

In regard to the localization of the primary lesion a great deal has been said and written.

Bergmann made an attempt to differentiate between convex meningitis and basilar meningitis, and the result of his observations appears to prove that a convex meningitis is noted particularly for its acuity; for its rapid extension and the intensity of symptoms. It has also been claimed as a distinguishing feature that in cases of convex meningitis paralysis appears sooner and is more extensive. Basilar meningitis, on the other hand, is noted for the slowness of the local process, the absence of intense symptoms due to cortical irritation; circumscribed paralysis appearing at a late stage; again, it differs from meningitis of the convex surface of the brain by a tendency of the inflammation to extend along the spinal structures, being followed by a spinal meningitis, as indicated by rigidity of the muscles of the spine and neck, the disease resembling in this respect, in many instances, cerebro-spinal meningitis.

The prognosis has not yet been considered. It is sufficient to say that it is always grave; the majority of cases of traumatic infective meningitis prove fatal. The prognosis is always unfavorable because the infection once thoroughly established is beyond the control of the surgeon; the process always manifests an inherent tendency to extend to all of the membranes and the subjacent brain tissue, and even to the contents of the spinal canal. The prognosis is grave because traumatic meningitis means a suppurative meningitis; suppuration necessarily follows from the very nature of the primary infective cause, provided that life is sufficiently prolonged for such a termination to take place, because in many instances death is produced earlier by compression on account of the unyielding character of the cranial vault, resulting in fatal compression of the brain which annihilates the essential physiological functions of the brain.

In the treatment we will briefly refer to the importance of establishing free drainage as a prophylactic measure; and the resort to all measures which are known to effect thorough local disinfection. It has been found, for instance, that it is not injurious to apply even caustics to the brain, so you are justified in cases of suspected infection after an injury to resort to local disinfection by thoroughly cleansing the wound and its vicinity, to be followed by the application of a ten per cent. solution of chloride of zinc to the wounded surfaces, and thorough and prolonged irrigation with a one-tenth per cent. sublimate solution—taking special precautions that these agents must be brought in contact with the entire surface which has been exposed to infection. The prophylactic treatment is of the greatest importance, while the curative is by general consent considered as *nil*. The life of the patient in all cases of compound fracture is, as it were, in your own hands. If the inflammation has taken place at the seat of traumatism before the patient has come under your care, the most conscientious application of all antiseptic precautions is called for in all cases of wounds of the scalp and compound fractures of the skull, as furnishing the only guarantee against traumatic meningitis. The case is usually beyond hope of recovery after the infective inflammation has invaded the subjacent meninges. In a recent

case before you touch the wound you must disinfect your hands with a strong solution of sublimate. To ascertain the extent of the injury, expose the upper portion of the wound by incising the scalp freely, and if there is any doubt as to the aseptic condition of the exposed meninx, you should disinfect it, being careful, at the same time, to arrest all hemorrhage, so that the formation of a subsequent blood-clot may not act as a favorable culture soil for any remaining germs. Prevent the accumulation of wound products by establishing free drainage of the subcranial space.

The old-time remedy, venesection, needs to be mentioned, not as a curative measure, but as a potent prophylactic remedy to modify reaction after an injury to the brain. When you are dealing with a case of contusion or concussion of the brain—*injuries which are necessarily followed by a certain amount of reaction*, if you can select the time when reaction is to be re-established to modify intravascular pressure, you may prevent undue engorgement by the use of timely and well-directed measures; consequently, at that stage, when cerebral irritation manifests itself by severe headache with bounding pulse, if there are no contraindications, you are fully justified in resorting to the free use of the lancet as the most potent agent until you have brought the heart's action under your control. With a view of still further modifying the intracranial circulation, resort early to prolonged use of applications of ice to the head, which is particularly useful in this locality, because the vessels being located so near the surface, the ice has a direct effect in contracting the smaller vessels, thus diminishing in direct manner the blood supply to the brain. This agent is not only effectual in modifying the circulation, but at the same time it has a prompt effect in reducing the temperature. The prolonged application of cold may also produce a salutary effect by arresting or retarding the reproduction of infective germs. Albert has well said that in all cases of injury to the skull and brain, you are expected to do something. He says there is no harm in the application of cold water, but when inflammation is threatened, it should always give way to the application of an ice-bag as one of the most potent means to meet the urgent indications. The beneficial effects of cold in modifying the cerebral circulation, in diminishing symptoms of central irritation are well known, and should never be omitted in the prophylactic and curative treatment of traumatic meningitis. In all cases of wound infective diseases we should aid the efforts of nature to eliminate infective germs by inducing an artificial gastro-intestinal catarrh, and for this purpose it is advisable to administer a large dose of calomel with the view of limiting also the cerebral congestion by inducing an artificial congestion in the alimentary canal.

I will next call your attention to the frequency of suppurative inflammation of the brain and its envelopes caused by pre-existing pathological processes independently of traumatism. In cases of suppurative osteomyelitis of the mastoid process, the vein which merges into the lateral sinus is often the medium of a direct extension of inflammation to the lateral sinus, the primary cause extending along that vessel by continuity and involving finally the sinus itself. It is that form of sinus-thrombosis and sinus-phlebitis that so frequently proves fatal in cases of inflammation of the

internal ear and mastoid cells, producing, as a result, suppurative meningitis, abscess of the brain, and pyæmia. Suppurative inflammation in the interior of the cranium has also not infrequently been observed as the result of caries of the cranial vault, taking place in a similar manner by continuity of the inflammatory process along the veins, extending, perhaps, to the longitudinal sinus, resulting in a sinus-thrombosis, sinus-phlebitis, and finally meningitis. The succession of pathological changes may, however, be the reverse, the process in the meninges extending by continuity of tissue directly to the sinus, producing sinus-phlebitis, which is in turn again followed by a sinus thrombosis. The symptoms indicating this lesion are those directly referable to a disturbance in the cerebral circulation. If a sinus has become suddenly obliterated either by extension of the thrombus to the sinus, or as a result of secondary sinus-thrombosis following sinus-phlebitis, a passive congestion on the venous side of the obstruction is a necessary and inevitable result; consequently there are symptoms indicative of cerebral congestion and fulness of the external veins which are contributory to the obliterated vessel. When the longitudinal sinus is the seat of obstruction, the veins of the forehead become distended; in case of sinus thrombosis of the lateral sinus, we observe dilatation of the vein over the mastoid process which perforates the bone and empties into the lateral sinus; obstruction in this particular vein being indicated *intra vitam* by local œdema in the region of the mastoid process. Please remember the fact that in case of sinus-thrombosis of the lateral sinus, following suppurative inflammation of the ear, one of the first evidences pointing to obstruction of the venous return from the lateral sinus is local œdema in the region of the mastoid process, and which is not attended by any evidences of superficial inflammation. Again, in case of sinus-thrombosis of the cavernous sinus an interference with the return of venous blood from the orbital region takes place, indicated by an unusual prominence of the eyeballs, but as in this particular region the venous engorgement affects by its close proximity the nerves supplying the eye—the oculomotorius—you have, in addition, evidences of motor paralysis affecting the muscles of the eye. In thrombosis of the lateral sinus, when the thrombus increases in length in a central direction and reaches the jugular vein, the return of venous blood through this channel is obstructed. Gerhart says "this lesion is indicated by a preternatural emptiness of the external jugular vein on the affected side, due to a more easy return of the venous blood through the partially empty internal jugular." You will recognize the lesion by comparing the external jugular veins, locating the lesion on the side presenting a preternatural emptiness or collapsed condition of the vein. If, with this collapsed condition you have symptoms indicating a primary suppuration in the internal ear; and if at the same time you also have symptoms expressive of cerebral congestion, your diagnosis is almost positive: a thrombus in the lateral sinus.

In regard to the prognosis, just one word. If a sinus-thrombosis results from a direct injury to the sinus independently of traumatic infection, simply as the result of anatomical imperfection in the sinus itself arising from the traumatism, interfering with the circulation in the vessel, and the thrombosis is followed by a productive

sinus-phlebitis, your prognosis is favorable, as a gradual obliteration of the sinus is not incompatible with a normal performance of the functions of the brain. If, on the other hand, a thrombus has occurred as the result of a suppurative sinus-phlebitis, or from infection from any other source, the thrombus does not become adherent; it does not serve as a medium in which the products of plastic proliferation find a favorable soil for growth and development, but it is an infective thrombus, and as a result of that infection disintegration takes place, the thrombus breaks up, and produces embolism and pyæmia. Consequently in all cases of infective sinus-thrombosis and infective sinus-phlebitis, the result of infection either from osteomyelitis or wound infection, your prognosis must be guarded, as a fatal termination is inevitable.

In regard to treatment there is but little to say, inasmuch as most of these sinuses are not within reach of operative procedure. It has been suggested in the case of suppurative sinus-phlebitis of the superior longitudinal sinus to expose the sinus in order to remove the infected thrombus, with a view to prevent an extension of the infection to subjacent parts and to guard against pyæmia; but if you recollect the extent to which some of these channels may be blocked the measure appears hazardous to say the least. The inaccessibility of the cavernous sinus, and the importance of the structures in the immediate vicinity of the lateral sinus also preclude the advisability of operative interference. You will treat these cases, then, on the same principle as you would pyæmia. The most important element is the prophylactic treatment. In cases of suppurative inflammation of the mastoid cells do not postpone an operation until sinus-thrombosis has taken place, but resort to timely treatment by using the chisel to gain access to the infected structures, remove the infected tissues by *evidement* and ignipuncture, effect complete and thorough disinfection, and treat the wound as an infective one. These are the measures, when timely resorted to, which will prevent sinus-thrombosis in cases of suppurative inflammation of the cancellated tissue of the mastoid process. The same treatment should be adopted in all osteomyelitic processes wherever they involve the cranial bones.

Concussion.—We will next briefly consider the subject of concussion. By concussion of the brain I mean a sudden and complete annihilation of cerebral function as the result of an external application of force unattended by any recognizable anatomical tissue lesion. It is a perverted functional condition of the brain which results from a sudden application of force, producing a jar, as it were, of the brain substance, a condition which cannot be demonstrated in the brain, either microscopically or macroscopically; its essential feature consists in an altered relation between the molecular component parts of the brain, produced by a sudden commotion or jar. The complexus of symptoms which characterize this lesion appears immediately after an injury, and are expressed to us, in the first place, by a total loss of consciousness; the patient does not appear to recognize his condition; is totally ignorant of what has happened. Very soon after the accident he vomits, which appears as a mechanical act—it is not the kind of vomiting observed in cases of traumatic meningitis, but simply the evacuation of the contents of the

stomach, which is undoubtedly an effort on the part of nature to restore the equilibrium of a disturbed circulation. The pulse is slow, from 50-60 per minute, soft and compressible. A peripheral paresis of the vaso-motor system is indicated by extreme paleness of the cutaneous and mucous surfaces, clammy perspiration; respiration almost imperceptible; the respiratory movements being limited, imperfect, and slow. Acute cerebral anaemia following immediately upon concussion is indicated by an equal dilatation of the pupil; the paralysis, being partial and general, does not affect any particular muscular group, but all the voluntary muscles, the nerves of motion and sensation, as indicated by a depression of all of the cerebral functions; in other words, the prominent clinical features of concussion are: unconsciousness; slow pulse; slow respiration; dilated pupils, with paresis of the sensory and motor nerves.

In making a differential diagnosis the only conditions which might lead to difficulty are the existence of contusion and compression. Concussion and contusion have been erroneously used as synonymous terms, but constitute two well-marked and distinct lesions, both from a pathological and prognostic standpoint. Concussion is usually an evanescent condition, not attended by any appreciable structural changes, while contusion signifies a laceration of the brain substance and some of the smaller bloodvessels, attended by extravasation of blood, followed by symptoms pointing toward a localized lesion in the brain. Difficulty in diagnosis arises from the fact that contusion is always attended by concussion; and the symptoms of concussion from the commencement may overshadow those due to the contusion. A differential diagnosis is only possible after the symptoms pointing toward concussion have disappeared. Compression due to traumatism, for instance after a depressed fracture of the skull, produces suddenly a diminution of space within the cranial cavity, and, if considerable, is almost sure to be attended by focal symptoms indicating compression of the brain. While the symptoms of concussion almost always subside within a few hours—or, at the most, within a day or two—the symptoms pointing to contusion or compression remain for a longer time, indicating a more serious injury to the brain.

In the treatment of concussion the most that is needed is physiological rest, absolute and complete, in the recumbent position, as this position favors a restoration of the disturbed circulation to its normal condition. If symptoms indicative of shock accompanying concussion present themselves, you may administer stimulants sufficient to counterbalance the depressing effect of the traumatism, favoring at the same time peripheral circulation in the extremities by the application of external heat. The older English surgeons always resorted to repeated bleeding in cases of concussion, with a view to prevent subsequent inflammation. It is not necessary to state the result, perhaps, but a great many patients died, not from the concussion, but from the repeated venesecti ons. Concussion uncomplicated by other lesions is only a temporary condition, and in the great majority of cases yields readily to nature's resources, consequently all that is necessary is to secure rest, and to rely on an expectant course of treatment; at the same time it is your duty to keep your patient under the closest observation until you have excluded the possibility of deeper and graver brain lesions.

One of the first symptoms frequently observed in cases of cerebral contusion are convulsions, local or general, according to the extent and location of the contusion. If the convulsive movements assume the form of a monospasm, the injury is usually located on the opposite side of the brain. Let me here call your attention to the fact that contusion does not necessarily occur always at the site of the external injury. If, for instance, the force has been applied to the right side of the head, and the paralysis or convulsive movements occur on the same side, it is evident that the transmission of force through the brain substance has resulted in contusion of the brain on the opposite (left) side. This is an extremely important point to remember, when we consider the causative relation between a contusion of the brain and brain abscess, where it is of the greatest importance to localize with accuracy the seat of the lesion. It is a familiar fact that surgeons have often been disappointed in seeking for pus on the injured side in operations for abscess of the brain, when perhaps by transmission of force the contusion and subsequently the abscess have occurred on the opposite side.

In conclusion, let me again impress upon your minds the importance of treating even the most insignificant wounds of the scalp under the strictest antiseptic precautions, with a view of securing for your patients absolute protection against the disastrous consequences arising from traumatic infection. In cases of contusion of the brain make an early diagnosis and adopt timely measures which will prevent undue vascular engorgement, and, to a certain extent, extravasation at the point of contusion. In concussion of the brain be careful to eliminate the existence of contusion by watching the course of the lesion diligently until a sufficient time has elapsed, when a positive differential diagnosis between concussion and contusion can be made; and after you have fully satisfied yourself that you are dealing with a case of concussion complicated by contusion, adopt measures which will prevent microbic invasion of the contused area, and which will, at the same time, moderate the vascular engorgement at the seat of contusion.

ORIGINAL ARTICLES.

THE DETECTION OF CHRONIC BRIGHT'S DISEASE.

BY CHARLES W. DULLES, M.D.,

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IN PHILADELPHIA.

IN January, 1884, a gentleman came to consult me on account of a sense of constriction and oppression which he felt in the lower zone of the thorax, and some dyspnoea, which affected him chiefly when he walked in the morning to the car which conveyed him to the place where he exercised his duties. He was a man with important responsibilities, past middle life, rather stout, of medium height, of excellent habits, but whose duties interfered with his mid-day meal and required him to sit for five or six hours every day in a crowded and ill-ventilated room.

9*

The point in regard to his case to which I wish to call attention does not require further description of his condition and symptoms, except to say that he had never known of having any oedema of the feet or other cause to suspect his kidneys. On making a physical examination of his thoracic and abdominal organs, I found no sign of any disorder except a loud, ringing, or booming second sound of the heart, which my experience has led me to regard as of peculiar significance. This sound is simulated by that which is heard when one presses the palm of his hand pretty firmly against his own ear, and at the same time taps the back of his head with his forefinger. This sound, heard over the heart, has seemed to me to be characteristic of a moderate degree of essential hypertrophy of this organ. Hearing it in the case I am describing, I thought it important to examine the patient's urine. This I did most carefully and thoroughly. I found it normal in amount, color, clearness, sediment, and odor. Its reaction was strongly acid, its specific gravity 1.020; the urates were normal; uric acid was in excess; the phosphates were normal; no albumen was found, and no sugar. By a microscopical examination, after forty-eight hours settling, I found various forms of uric acid crystals, a few small plugs of small white cells, and a *very few delicate hyaline casts*. I gave my patient a cautiously worded diagnosis, advising careful living, and instituted treatment which relieved his symptoms. Becoming deeply concerned about himself, however, he now, with my full approbation, consulted the gentleman who had before been his medical adviser. The latter examined him, and said that his heart was perfectly healthy, and that an examination of his urine showed it to be normal. Not quite reassured by this, the gentleman consulted three other eminent medical men; one of whom said he had a fatty heart, while two of them said his heart was sound. One of the latter, who also said that his kidneys were perfectly healthy, had him under treatment for a long time, giving him chiefly Fowler's solution and nitroglycerine. A prolonged absence from work, with travel and carefully regulated diet, contributed to making the patient feel decidedly improved. After the lapse of two years and a half, he came to me again on July 3, 1886, asking me to examine his urine, so that he might select an appropriate medicinal spring, at which he should spend his summer vacation.

The circumstances which I have narrated made this visit one of peculiar interest to me, and the examination of the patient's urine equally interesting. Again I found the amount, color, clearness, and sediment normal, while the odor was not pleasant. The reaction was acid, and the specific gravity 1.024. The urates were normal, the phosphates were doubled. On testing by boiling the filtered urine, and by applying the nitric acid test in the ingenious manner suggested by Dr. Thomas S. K. Morton, in *THE MEDICAL NEWS*, May 8, 1886, I failed to discover any evidence of the presence of albumen. But on testing it with the potassium-mercuric iodide and citric acid paper of Dr. Oliver, of Harrogate, England (with some papers which I received directly from him), I did find a distinct trace

of albumen.¹ I found no sugar in the urine, and no other abnormality except a slight excess of coloring matters. After twenty-four hours, and again after forty-eight hours, I made a microscopical examination, and found hyaline tube casts, one young epithelium cell, various forms of uric acid, oxalate of calcium crystals, and several varieties of microorganisms.

Fig. 1 represents what was found under a single cover glass, although all these objects were not seen in any one field of the microscope.

FIG. 1.



- a. Hyaline tube casts—one so-called waxy cast.
- b. Uric acid in various forms.
- c. Young epithelium cells.
- d. Oxalate of calcium.
- e. Micrococci and bacilli.

It is seen, then, that what I discovered at this last examination corresponds with what I found two years and a half ago; and I think it corroborates the diagnosis I then made of chronic Bright's disease, associated with a moderate degree of essential hypertrophy of the heart, or *vice versa*.

The interest of this case hinges upon the diagnosis and the ground upon which it rested. As to the heart, the diagnosis rested upon the peculiar sound described above, which has never, I think, deceived me. But the diagnosis was, in my opinion, supported by what I found in the urine, and the inference which it warranted. The discovery of the tube casts, which escaped another, and perhaps several examiners, may have been due to the method of examination which I employ, and it is chiefly to call attention to this that the account of the present case is published.

In the first place, I am strongly impressed with the advantage of allowing the sedimentation of a specimen to take place in a straight glass, and not in

a conical one, as is recommended in most of the books. In the latter, I think, one may easily miss a few tube casts, because they are not heavy enough to resist the attraction and friction of the sides of a conical glass, and so never find their way to the bottom. For this purpose a test-tube with a foot, I think, is the best receptacle.

Another point to which I desire to call attention is the plan I have devised for catching a specimen of sediment for microscopical examination when the deposit is very slight. The apparatus I use is represented in Fig. 2. After leaving the urine to settle

FIG. 2.



in a test-tube with a foot for twenty-four hours, under a paper cover pressed down upon and around the top of the tube, I take a long, pointed glass tube, close the upper end firmly with my finger, and pushing the point through the centre of the paper cover of the test-tube, thrust it steadily to the bottom of the urine. I now remove my finger, and the bottom layer of the urine, containing the deposit of twenty-four hours, flows up into the long tube. When it has risen to the level of the urine in the test-tube, I carefully twist a piece of soft paper over the upper end of the second tube, or stuff a small bit of absorbent cotton into it, to keep out all foreign substances, and allow the apparatus to stand undisturbed for twenty-four hours or longer, during which the deposit contained in the column of sediment falls to the bottom of the smaller tube. At the end of this time I close the upper end of the smaller tube firmly with a finger, withdraw it carefully from the test tube, and then allow the two or three drops nearest its point to run out on a slide, in two or three places, cover them properly with thin glass, and put them under the microscope.

¹ In this connection, I would refer those who are interested in the subject of delicate tests for albumen, to an interesting paper on this subject by Dr. James Tyson, and to the discussion upon it, before the Philadelphia County Medical Society, December 19, 1883, published in the volume of Proceedings for 1883-1884.

In this way, I believe, one may obtain a most typical specimen of the deposit, and I think the adoption of this method might prevent such a conflict of opinion as took place in the case I have described, or such an occurrence as is mentioned by Dr. Roberts in his work on *Urinary and Renal Diseases*, 4th edition, p. 439, in which he discovered hyaline casts in a urine which had been repeatedly examined with negative results by two medical men well accustomed to such examinations.

It is in the cases in which it is difficult to determine the existence of chronic Bright's disease that it is often most important to be aware of its presence. Many obscure symptoms become intelligible when this factor is recognized and taken into account, and it is often possible to put a patient on his guard against dangers which would not be considerable if the kidneys were in perfect condition. I am aware that there is often unnecessary alarm felt both by the patient and by his physician upon the discovery of a chronic disorder of the kidneys; and I would not like to contribute to any increase of the already exaggerated dread of Bright's disease. But if such a condition is present, it cannot be doubted that it would be for the advantage of both in most cases to have it known; and so I hope that the simple suggestion which I here make may prove of value.

4101 WALNUT STREET.

PSEUDO-INTESTINAL OBSTRUCTION.

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IN perusing the journals we find reported many cases of intestinal obstruction that seem to have presented but little difficulty in their treatment, and in which, after a shorter or longer interval, the patient goes on his way rejoicing. The main features of the majority of the cases so reported, seem to be the sudden constipation, the ineffectiveness of purgatives, and the rapid relief afforded by an enema or two. It is, then, not to be wondered at that when cases are met with that are more protracted, more stubborn, that are attended with more distressing manifestations, the practitioner, with the histories of the above-mentioned cases in his mind, should proceed slowly, abstain from all radical measures in the hope that the next prescription or the next clyster administered will bring about the much desired cure. Comparing these numerous cures with the statistical tables presented to us by Leichtenstern, Brinton, and Treves, we cannot but be struck by the discrepancy, and when we recall the aphorism of De Haen regarding this malady, "*morbus terrible cerebrinum latale*," we certainly must be surprised.

The question then naturally arises, Are all these cases cases of intestinal obstruction, or may there not be some other cause for this sudden constipation and for the attendant manifestations?

To a certain extent this question has already received an affirmative reply. In 1865 Dr. Henrot, of Paris, published a monograph entitled *Des Pseudo-Étranglements*, in which he calls attention to a series of cases which, though having many of the symptoms of intestinal obstruction, were in reality not so; the

manifestations being brought about by causes other than an obstruction of the bowel. In support of his position he cites numerous cases which, during life, presented all the symptoms of intestinal obstruction, but in which, upon post-mortem examination, the lumen of the bowel was found perfectly pervious.

In an elaborate study of the etiology of this new category he classifies these cases under three heads:

1. Those due to direct paralysis of a segment of the bowel from changes in its walls.

2. Those due to indirect paralysis, depending upon reflex nervous action.

3. Paralysis of the bowel as a feature in a general affection of the nervous system.

It can be readily seen from the above classification that it embraces many grave forms of disease which frequently end fatally, in which, during life, it is impossible to make a diagnosis between the real and the pseudo form of obstruction and in which only an autopsy can disclose the true condition. The milder forms are generally attended by such other phenomena as, e. g., those of hysteria, so that their true character is, in a majority of instances, easily recognized.

A series of cases have, however, come under my observation, which, though belonging in the category of pseudo-intestinal obstruction, cannot be ranged under any of the etiological heads above mentioned—a class of cases which, having many of the features of intestinal obstruction, are frequently mistaken for such, are reported as cases of true intestinal obstruction cured with little difficulty, and are, without doubt, included in the statistics of recoveries from this malady.

The cases that I have seen, etiologically considered, may be classified under two heads:

1. Those due to paresis of the bowel from inhibition of the nervous centres—or, perhaps, but temporary inertia of the muscular intestinal coat.

2. Those due to large accumulation of flatus.

CASE I.—In the summer of 1880, I was called to see, in consultation, Mr. A. L., a German, saloon-keeper, at forty-two, a man of ordinary stature and good physical development, who had been engaged in his present business for years. The history of the case, as given by the attending physician, was as follows: Patient being constipated for several days he took a purgative; this not producing the desired effect, he called upon his physician, who prescribed for him the Vienna laxative infusion, reinforced by an addition of sulphate of magnesia. This not acting, some other purgatives were prescribed and taken, but without any effect. The doctor now began to suspect that he had to deal with a case of intestinal obstruction. The patient complained of great fulness, and said he could not lie down; he had great difficulty in breathing; his countenance was very anxious. He dreaded that he was afflicted with some terrible malady, and was, perhaps, near his end, because his bowels would not act. He was extremely restless and could not lie still for five minutes at a time; he would lie down on the bed for a moment and jump up again and walk the floor. He had not slept at all for two nights; he did not complain particularly of pain. An ex-

amination of his abdomen revealed nothing upon the exterior to indicate an intestinal obstruction. There was some tympanites, not very extensive, and some sensitiveness to pressure over the whole abdominal region.

I advised an enema of hot water to be immediately administered. An ordinary rubber syringe was procured, and he was at once given an injection of about a pint and a half of water, at a temperature of 103°. In about ten minutes this was followed by another injection of about the same quantity of cold water, temperature about 90° F. These passed away. He was now ordered small doses of quiniae sulphat. with extract of nux vomica. We left him, returned in about three hours, and gave him another injection of hot water, which was followed by a free fecal evacuation with discharge of flatus. He was ordered to continue the pills. On our visit the next morning we found the patient behind the bar. He declared he was all right. He had slept well, except when compelled to arise to evacuate his bowels, which occurred three times during the night. I saw him some time afterward and he had had no further trouble.

Although many of the symptoms that usually accompany intestinal obstruction were wanting in this case, such as pain, tympanites, etc., still, the sudden constipation and the total ineffectiveness of purgatives of various kinds were good grounds upon which a true intestinal obstruction might be supposed. It must, furthermore, be considered that pain may be absent altogether as well as tympanites, as has been pointed out by Mr. Treves in his Jacksonian prize essay, and not manifest itself until after the obstruction has persisted for some time. This absence of pain is well illustrated by the clinical histories of Cases I. and IV. in my paper on "Treatment of Intestinal Obstruction by the Force Pump," in the number of *The American Journal of the Medical Sciences* for January, 1886; in Case I., where there was clear and undisputable evidence, as there related, of intussusception, there was very little pain and only complained of when questioned about it; and in Case IV., where the patient, a few days before her death, though the trouble was of some standing, had walked around visiting friends, ascending innumerable stairs in her peregrinations. A most striking illustration of this point is furnished by the case reported by Dr. John McGown of a patient suffering from intestinal obstruction for a period of nine months. In his report the doctor says, "He complained of no pain at this nor at any time during the whole course of the disease."

I felt convinced, however, after a careful examination of the patient, that we were not confronted by a true intestinal obstruction. The fact of absence of all manifestations upon the abdomen (though this *per se* does not count for much frequently), that the patient had been well up to the date of the setting in of the constipation, that he jumped out of bed without difficulty and raced around the room (though this latter is not a reliable diagnostic sign

as already shown)—in fact, the ensemble of the case led me to believe that we had to deal with some temporary inhibition of intestinal action, and not with an obstruction of the lumen—and that a powerful stimulus to the muscular walls and nervous filaments would bring about the desired effect. To this object the treatment already related was directed and the result verified the diagnosis.

As regards the etiology of the inhibition in this case, it would be no difficult matter to invoke a simple inertia of the intestinal tract, such as is frequently met with; the only obstacle to such an assumption would be the fact that ordinary inertia or constipation is generally easily overcome by the use of a purgative, more or less strong, according to the habit of the patient, whilst in the case here related these remedies seemed ineffective. However, even this might be explained.

There has presented itself to me in this connection, the question, Has the alcoholic habit, or rather the imbibition of a considerable quantity of alcoholic beverage daily, played any rôle in this sudden inhibition of intestinal action? It is well known that alcohol imbibed produces an irritation of the peripheral nerves, and, as has been demonstrated, may proceed so far as to produce ataxia and paralytic conditions either by atrophy or destruction of nerve structure,¹ and though it may perhaps be affirmed that beer containing but a minute quantity of alcohol and having considerable diuretic properties which cause its early elimination from the system, cannot bring about such severe irritation as could ultimately result in atrophy or destruction, still it cannot be denied that even this mild alcoholic beverage does produce irritation, or stimulation if it so please, of the peripheral extremities of the nerves. This is well illustrated by the increased appetite felt by persons with weak digestion or overworked persons after taking a glass of beer before meals; the relief of the sensation of "sinking in the epigastrium," so frequently experienced by nervous or debilitated persons, by taking a little ale or beer, and many other phenomena of this character that come under the observation of every practitioner. The deduction might, therefore, be readily made that a continuous consumption of even such mild liquor in considerable quantity could bring about a condition of obtundity of the peripheral nervous filaments; and, as it has been demonstrated experimentally that alcohol has a peculiar affinity for the stomach and bowels,² it could be readily explained why such a condition of the nervous filaments should supervene more readily in these organs than in other parts of the body.

If it be objected, however, that the intestinal canal is not under direct control of the nervous system, that the food and other matters passing through it are sufficient to excite peristaltic action,³ another explanation can be offered. It is well known that alcohol has a relaxing effect on the muscular structure,

¹ American Journal of the Medical Sciences, January, 1886: "Alcoholic Paralysis." Brain, January, 1886: Dr. Dreschfeld, "Further Observations on Alcoholic Paralysis."

² Practitioner, London, 1884. Progrès Médical, April 5, 1884: ³ Foster's Physiology, edited by Reichert, 1880: "Movements of Small Intestine."

¹ British Medical Journal, January 21, 1882. "Intestinal Obstruction existing for Nine Months Cured by Colopuncture," by John McGown, M.D.

and it might, if taken steadily day by day, short of actual intoxication, produce such a torpor of the muscular coats of the intestine that they would not respond to the usual stimulus.

Or there may be produced such a condition of chronic congestion of the parts as to prevent perception of the usual stimulus.

I have observed clinically in extensive beer drinkers that at times a sudden torpor seems to come over the intestinal tract, manifesting itself by constipation and a free development of flatus, so that they will feel bloated (the belly is very tympanitic) and have difficulty in breathing—and certainly extensive tympanites is an evidence of paresis of the bowels.¹

CASE II.—Ch., æt. sixty-three. Rolling mill boss; short of stature and ponderous in weight. Has been sick for some days; cannot pass his urine well; great dyspnea so that he cannot lie down; cannot retain anything upon his stomach. He has been under medical treatment since the outset, but seeing no improvement he discharged his physician and, on the advice of a friend, sent for me. An examination revealed enormous tympanites of the abdomen. No soreness, but complained of gripping pains; he had had no stool for five days. He was afraid, from what his physician said, that his bowels were tangled. I directed that he be given an injection with hot water, temperature about 103° . His wife procured an ordinary syringe and injected about a pint, I remaining to see that the clyster was properly administered. This passed off with a free discharge of flatus; about ten minutes later he was given another injection, about the same quantity as before of spring water at the ordinary temperature (this was in summer); it soon passed off with abundant discharge of flatus and some fecal matter. Fifteen minutes after this another hot-water injection was given and came away with a large stool. He said he felt very much relieved and lay down and rested. The same afternoon he took some beef-tea and retained it. I ordered him some tincture of nux vomica with a little Fowler's solution. The next day he was at work.

CASE III.—Mrs. G., æt. fifty-five, woman of short stature, very fat, and large pendulous belly. Complains of great pain in the abdomen. As I have treated her frequently for such attacks, and it being late in the evening I prescribed an opiate, directing the same to be repeated every hour and a half until suffering was relieved. Returned next day and found her no better; still suffering great pain—in fact, had suffered all night; her abdomen was very much distended and painful. Her bowels not having moved (her habit being every third or fourth day), I directed that a large dose of oil be given, to be followed by an opiate after the bowels had acted. On my afternoon visit I found that the oil had not acted. I ordered it repeated with same directions as in the morning. The next morning early I was summoned to her. She complained of greater pain than before; she could not rest all night; she had thrown up the oil and vomited everything after that. She was short of breath and was afraid that she would

choke. The tympanites was more marked. I directed that she be given an injection of hot water. This was done and a considerable discharge of gas soon passed away. She felt greatly relieved after this, the gripping pains ceasing and the choking sensation disappearing. I directed her daughter to repeat these injections every two hours until she had several stools. Next morning I found her much better; her bowels had moved; the pain had ceased altogether and she had slept well all night; the tympanites was gone; she felt very much prostrated. A rest of another day in bed, good nourishing food, and a little brandy, and she was well and about.

The great resemblance of these two cases to true intestinal obstruction is apparent; we have the symptoms that we find in the most marked cases of this disease. We have the constipation, in the first case of five days' duration, in the second case two days, though if her habit as regards stools had not been known to me, I might have counted it five days also; there were the pain, the distended belly or bell-bombé (upon which some lay great stress), any lastly, in Case II. the urinary difficulty. Nevertheless, I say with certainty that these were not cases of true intestinal obstruction, but that the whole difficulty lay in the superabundant flatus to which people with large pendulous bellies are prone, especially elderly people with defective teeth and also persons whose digestive powers have, from some cause or other, become enfeebled; this superabundance of flatus causing a paresis of the intestinal tract and thus inhibiting its action. Furthermore, the success of the treatment, a small enema, but of powerfully stimulating character, so as to provoke powerful contraction of the bowel and thereby the expulsion of the flatus, proves the correctness of the diagnosis.

That it is possible to mistake cases of this character for true intestinal obstruction is very evident, and it is not stretching the imagination to assume that many of the cases reported as intestinal obstruction cured by puncture with a fine trocar, and in which the main feature of the operation was the evacuation of a large quantity of flatus as is expressly stated by Mr. Worthington in the report of his case,¹ were cases of inhibition of intestinal action from overdistension of the bowels by flatus. Mr. Treves, in his book on *Intestinal Obstruction*, chapter on treatment, section puncture with fine trocar, quoting two cases, expresses great doubt as to their being true intestinal obstruction, for his own experience with this method has not been such as to lead him to believe in its efficacy. This opinion is corroborated by the history of the case of Dr. McGowen, in which, although the patient was temporarily relieved by this procedure, it required other measures to effect a cure.² It has, perhaps, been the habit up to the present time of calling all cases intestinal obstruction where the main feature is an inhibition of intestinal action without regard to the etiology of the inhibition; but at the

¹ Case of Intestinal Obstruction Relieved by Puncture of the Bowels, by James C. Worthington. *British Medical Journal*, 1882, vol. ii.

² Although the title of his article would seem to indicate that the patient was cured by the colopuncture, a careful reading will demonstrate that the colopuncture only relieved, and that it was the other procedure that cured.

present day when operative interference by laparotomy is growing more in favor, and resort to it advocated at an early stage of the case, the question of differential diagnosis between pseudo- and true intestinal obstruction certainly becomes one of great importance. This is well shown by the case mentioned by Dr. Lusseau of the hysterical form of pseudo-strangulation: "In this instance the resemblance was so exact that *an operation for the relief of the intestinal obstruction was proposed*. The patient, however, soon recovered when treated by antispasmodics."¹ It is important to know whether a given case may be one in which the question of operation may present itself for consideration at any moment, or whether it be one of those pseudo forms that end in recovery with very little treatment. Such a distinction is furthermore of importance for the statistics of intestinal obstruction, that a correct estimate may be had of the number of cases, number of recoveries, as to the most successful means of treatment, etc.

I do not think it necessary to give any detailed explanation for the alternation of the hot and cooler injections as detailed in this paper, and mentioned in my paper, "The Treatment of Intestinal Obstruction by the Force Pump" (*Ibid.*); by this alternation the bowel is not habituated to the enema, and each clyster has a stimulating effect both on the muscular coats and on the peripheral nerve fibres, and excites peristalsis.

I will only add, in conclusion, that I believe that when enemata are resorted to for the purpose here indicated or for true intestinal obstruction, they should be of hot water; or if the patient prefer, and there are no contraindications, of cold water, that an effect may be immediately produced: the injection of lukewarm water is without effect, as can be readily seen by a study of many reported cases.

THE INTESTINAL SUTURE OF APPOLITO.

BY ROBERT P. HARRIS, A.M., M.D.,
OF PHILADELPHIA.

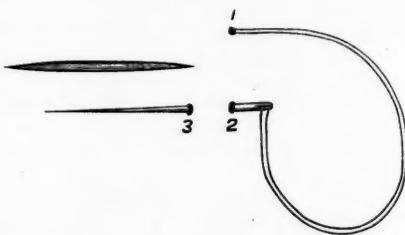
THROUGH the kindness of Dr. Domenico Peruzzi, a colleague of Prof. Pietro Loreta of Bologna, I am enabled to present a description of the suture which the latter has used so successfully in his divulsive operations upon the cardiac and pyloric orifices of the stomach, for closing the incision made in this viscus, so as to secure it against the escape of fluid nutriment, and establish an early union of the wound.

Since the time (1824) when the celebrated Jobert (de Lamballe) established the fact that intestinal wounds could be most rapidly united by securing their peritoneal surfaces in contact, by a process of welting, throwing up a ridge on the inner surface of the bowel, a revolution has been gradually effected in the manner of treating intestinal injuries whether accidental, or done by the knife of the surgeon in the exsection of morbid parts. Although the suture of Jobert was a very objectionable one, the principle on which it was founded soon led to improvements,

and two years later (1826) to the design of the interrupted suture of Lembert, made of such renewed importance of late in its application to securing the peritoneal portion of the uterine wound in the Cæsarean method of Sänger. The value of this application was shown in an operation performed in Philadelphia in November, 1844, by Dr. Thomas M. Drysdale, in which the uterine wound was so effectually secured that its peritoneal portion was found fully united after a survival of twenty-six hours, and no fluid had escaped into the peritoneal cavity. The old glover suture of the intestine, not being adapted to the new principle of closure, was modified and became the spiral uninterrupted suture, in which the stitches are taken as pins are inserted in a pin-paper, and the ridges are drawn together as in the manner of the Lembert suture. In 1844, Dr. Gély, of Nantes, devised the double parallel uninterrupted suture made with two needles and one thread, the thread ends being crossed to opposite sides of the wound after each stitch was taken, and the whole drawn and secured at the terminus by a single knot.

The suture of Appolito is a simplification of that of Gély, and is much more easily applied, as it is inserted with one needle which carries a double thread. When the needle is threaded, a knot is tied over a little ball of aseptic cotton, a modification of the plan of Reybard, and the needle is passed from within outward beyond the end of the wound, leaving the ball on the inside, as in Fig. 1: and the first

FIG. 1.



longitudinal stitch is taken parallel with the line of the wound on the opposite side, as is also shown. In Loreta's operation, the initial puncture is made about a centimetre beyond the end of the wound, and at the same distance from the line of it at the side: the stitch-holes will be two centimetres distant across the wound, and each internal stitch will be taken parallel to the wound on alternate sides, a centimetre long and a centimetre from the edge of the wound, as in Figs. 2 and 3.

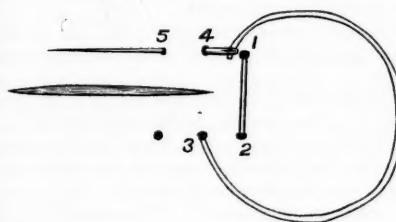
When the last stitch is taken, the thread is cut on one side and a Lembert suture is inserted with the remaining strand on the opposite side, as shown in Fig. 3. The double thread is drawn successively from puncture 3 to puncture 11, and the single strands at punctures 11 and 12 are drawn, tied securely and cut near the knot. The line of direction of the wound will now be seen to present a sinuous fissure, and not a straight one as after the closure of Gély, provided the stitches of the latter

¹Intestinal Obstruction, by F. Treves, p. 405. Italics mine.

have been taken in pairs of exactly the same length, otherwise there will be a tendency to gape.

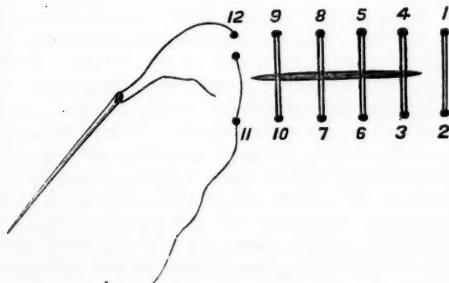
The Appolito is no doubt a better suture for the stomach than it would be for the intestine, where the walls are thinner and more yielding. In a woven fabric, the single stitch of Appolito would be known as a *running stitch*, and that of Gély as a *double stitch*, the latter, upon mechanical principles, being con-

FIG. 2.



sidered the more secure, although the former in handwork is more employed for its simplicity, where strength is not of absolute necessity. To make a single stitch that will not draw, would be more complex than either. The Lambert suture is valuable for small or cross wounds of the bowel, but must be inserted at very short intervals to prevent gaping. The value of any particular form of suture does not depend so much upon its design, as upon the mechanical capability of the operator in accurately carrying it out. How rarely do we see, even in a skin-wound, all of the needle punctures made at exactly opposite points, as shown when the threads come to be tied across it. Accuracy is all-important

FIG. 3.



in making the closure of an intestinal wound effective, whether it be made by the suture of Lambert, Gély, or Appolito: it is more easy, by either, to pucker the wound, than to avoid doing so. In all intestinal sutures, as the thread ultimately escapes by ulceration into the bowel, it is the practice to carry the stitches through all the coats, and not partially, as was once the custom. The material preferred is pure Chinese silk which has been boiled in water to separate the gummy matter.

MEDICAL PROGRESS.

THERAPEUTICS OF CHOLERA.—DR. GRANT-BEY thus describes his method of routine treatment in cholera epidemics.

On July 14, when the malady was raging at Geezeh, at our very doors, by the request of the local board I drew up elaborate instructions about cholera, and indicated the remedies that should be used, viz.:

1. "A mixture," of which the following is the composition and the instructions for use:

R.—Tincturæ opii	3 ss
Spiritus camphoræ	3 ss
Tincturæ capsici	3 ss
Chloroformi	3 iss
Spiritus vini rectificati . ad. 3 iiss.—M.	

Sig.—For the premonitory diarrhoea of cholera, twenty drops for an adult, and five drops for a child, in half a wineglass of water or chamomile tea, every hour or every two hours, etc., till diarrhoea ceases; but if vomiting or cramps set in, then leave off the mixture and give the "Anticholérique Pasteur," of which the following is the composition and mode of administration:

R.—Hydrargyri bichloridi	gr. ij
Spiritus chloroformi	3 x
Spiritus camphoræ	3 v
Tincturæ lavandulæ co.	3 ss
Spiritus rectificati	ad. 3 ij.—M.

Sig.—To be used when diarrhoea cannot be checked, and vomiting or cramps commence; a teaspoonful (3 j) to an adult, and thirty drops to a child, in chamomile tea, every quarter of an hour, every half hour, every hour, etc., according to urgency of symptoms.

On July 15, the epidemic reached Cairo, and its suburb Boulaq was devastated by it. Out of 1800 men employed at the Boulaq railway workshops, fifty-nine died of cholera. Many others who were attacked recovered after the prompt use of the remedies, and most of those who died did not take the medicine.—*Albany Medical Annals*, August, 1886.

PERSISTENT SWEATING IN INTERMITTENT STAGES.—In *The Asclepiad* for 1885, vol. ii. pp. 190-192, there is related from the *Medical Press* the history of a case by DR. MYRTLE, of Harrogate, in which the patient, a man seventy-two years old, died from persistent sweating. Since then I have received the details of other cases, similar but not so severe, to one of which attention should be called.

In this instance the patient, Miss C. E. de M., has herself supplied me with the history of the symptoms and with a memorandum and temperature chart by DR. DABBS, of Shanklin, Isle of Wight, under whose care she remained during the whole of the attack. Miss M. had suffered, three years previous to the occurrence of the particular symptoms now under consideration, from typhoid fever, and also from some signs of a tuberculous nature, so that she was an invalid before the attack. She took what she considered to be a chill in the summer of 1884, and suddenly began to perspire. The perspiration came on every day from ten to

one o'clock, and again from ten to one o'clock in the night, with occasional repetition in the early part of the evening. During these times she was simply bathed in perspiration, so that all her clothing was completely saturated, the bedclothes sharing the same saturation when she was in bed during the paroxysm. In order to give every attention to the various remedial measures that were suggested, a professed nurse was obtained from London, and all changes of treatment, general and local, were tried, but, as in Dr. Myrtle's case, without any effect. The perspirations began on August 1, 1884, and continued until the first days of November, when they suddenly and completely ceased. Owing to the existence of continued pain in the epigastrium, Dr. Dabbs inserted a seton over the seat of pain, and it is worthy of note that the cessation of the perspirations occurred at the time when the discharge began to take place from the seton. This practical fact deserves remembrance in similar intractable forms of the disease. Miss M. has had no recurrence of the intermittent perspirations since 1884.—DR. B. W. RICHARDSON, in *The Asclepiad* for July, 1886.

THE JUGULATION OF TYPHOID FEVER BY SULPHATE OF QUINIA AND LUKEWARM BATHS.—At the session of the Academie de Médecine of August 3, M. PÉCHOLIER, of Montpellier, read an essay thus entitled. He concluded that, by its antizymotic action, quinine, when associated with lukewarm baths, shortens the course of typhoid fever to a mean of from fourteen to sixteen days. He bases his statements upon over sixty-five consecutive cases, speedily cured, without any failure. —*L'Union Médicale*, August 5, 1886.

BEAUTIFYING THE SKIN.—In the work on diseases of the skin edited by Professor von Ziemssen, DR. HEINRICH AUSPITZ, of Vienna, makes the following observations upon this subject:

1. A healthy integument is not necessarily beautiful. Even if all requirements concerning diet, residence, atmospheric and climatic conditions, etc., are carried out, the complexion is often extremely bad. The general condition of health has no influence upon the beauty of the complexion, though it has upon the health of the skin.

2. Cleanliness is a *sine qua non* of the beauty of the complexion, though it does not play a great part in the health of the skin.

3. Water is serviceable to the skin in only moderate amounts and at moderate temperature. Very cold or warm baths, when used to excess, diminish the elasticity of the skin and its power of resistance to external irritants.

4. Distilled and so-called soft water are more suitable for washing, and less irritating than hard water.

5. The hard soda soaps are usually preferable to the soft potash soaps for toilet purposes. The quality of soaps depends upon the quality of their constituents and the thoroughness of their saponification. Good soaps must not contain free alkali, or any foreign irritating substance. The addition of moderate quantities of perfumes does not materially change the quality.

6. Simple, finely ground powders, such as starch, magnesia, etc., are entirely innocuous, and often act as a useful protection against external irritants.

7. Frequent application of alcohol abstracts the water of the skin, makes it dry and brittle, and impairs its nutrition. This is also true of glycerine. All toilet washes containing alcohol to any considerable extent should be avoided.

8. This is true to a still greater extent of other additions to washes, such as corrosive sublimate, mineral acids, certain metallic salts, etc.

9. Camphor acts merely as a bleaching powder. This is also true of benzoic resin, sulphur flowers, and substances containing tannic acid.

10. The use of sweet-smelling oils and fats should be employed to a greater extent than is now done for toilet purposes.

11. This is particularly true with regard to the growth of the hair. The nutrition of the scalp should be increased by the rational application of fat (for example in the form of oil baths by means of the application at night of a sponge soaked in oil upon the scalp), and the greater use of simple pomades. These should be applied to the roots of the hair rather than the shafts.

12. Substances should be avoided, or sparingly used, which abstract water from the skin and the roots of the hair.—*Southern California Practitioner*, August, 1886.

STOMACH OPERATIONS, PERFORMED AT PROF. BILLROTH'S KLINIK FROM 1880 TO 1885.—Briefly, the cases and operations are as follows: Gastrotomy, one case. This was done on a patient, æt. nineteen, for the extraction of some teeth. The patient recovered in five weeks. Gastrorrhaphy, two cases; both died. In one, the operation was performed for rupture of the stomach after a plentiful meal. Death occurred from collapse in four hours. In the other, from a gunshot wound in a woman aged sixty-three. Death from peritonitis and collapse in twenty-eight hours. Gastrostomy, four cases. In one, for œsophageal stricture, the result of swallowing a caustic alkali. Death occurred on the ninth day from inanition. In a second, for carcinomatous stricture at the cardiac orifice. Death, one month and a half after the operation, from croupous pneumonia. In a third, for the same reason as the second. Death, twenty-four hours after from inanition. In a fourth, also for carcinomatous disease of cardiac orifice. Death, eighteen days after from inanition. Gastrectomy, eighteen cases, of which eight recovered, and ten died. These cases consisted of fourteen pyrolectomies for carcinoma of the pylorus, six of which recovered. One pyrolectomy, combined with gastro-enterostomy, also for carcinoma of the pylorus, death in four months from return of the disease; three pyrolectomies for cicatricial stenosis, one recovered; and one, partial resection of the pylorus (removal of a wedge-shaped piece), with death.—*Glasgow Medical Journal*, August, 1886.

ACTION OF URINE ON THE PERITONEAL CAVITY.—At a recent meeting of the Russian Medical Society Dr. D. O. OLL recorded the results of a series of experiments on eleven dogs, in each of which a ureter was incised in such wise that its contents should drain into the peritoneum. The permeability of the ureter was assured by the introduction of a small glass tube in its upper end. Wound dressed with Listerian precautions. Eight dogs died of peritonitis between the third and sixth day after operation. The three survivors were

sacrificed on the seventeenth, twenty-fourth, and twenty-fifth day respectively. In them the urine had produced simply a local peritonitis with adhesions, resulting in obliteration of the artificial fistula. Not a drop of urine was found in the abdomen. There was dilatation of the wounded ureter and of the pelvis of the kidney, degeneration of the renal parenchyma. The author concludes that fresh urine is absorbed from the peritoneum without any bad results provided antiseptic precautions be used.—*Nouvelles Archives d'Obstétrique et de Gynécologie*, No. 5, 1886.

DIFFERENTIAL TOXICOLOGICAL BEHAVIOR OF GELSEMIUM AND STRYCHNINE.—The possibility of mistaking a case of strychnine poisoning with criminal intent for an accidental intoxication caused by a prescribed preparation of gelsemium recommended to our notice RAIMONDI's pertinent comparative investigations as set forth in the *Ann. di Chim. Med.*, Sett., 1885. If it is possible to recover enough of the poison to enable us to experiment with it on warm-blooded animals, the nature of the poison is readily established. If, however, the scantiness of the substance in question allows only experiments on frogs, the following differential features must be our guide :

1. In gelsemium poisoning the motor paralysis has a central cause, which does not apply to strychnine.
2. The effects of strychnine manifest themselves with equal intensity over the whole body, while in gelsemium poisoning the posterior extremities show the clonic-tonic convulsions more distinctly than the anterior ones.
3. Immediately or shortly after one strychnine paroxysm, a second may follow; in gelsemium poisoning considerable time usually elapses between the single paroxysms.
4. The stage of tetanus from strychnine may last several days, that of gelsemium rarely exceeds an hour.
5. In chemical respects the two drugs present also some characteristic differences, which, under the name of Schwarz's differential reactions, are detailed in Raimondi's paper.—*Therapeutic Gazette*, Aug. 16, 1886.

AN ANTISEPTIC DENTIFRICE.—DR. A. D. MACGREGOR, of Kirkcaldy, writes in the *Brit. Med. Journal* of July 10, 1886, as follows: "Few medical men, I suppose, have ever given a prescription for tooth-powder (such a matter is beneath their notice), and the selection of the ingredients for the various powders and pastes in vogue for the purpose of beautifying and cleansing the teeth is left entirely in the hands of those who certainly should not know better than medical men. I have frequently trespassed on this debatable ground, and recommended a particular dentifrice. In view of the extremely important part the teeth play in the economy of life, I never hesitate occasionally to inquire as to the attention they receive. A tooth-powder should possess certain characteristics: it should be antiseptic, cooling, agreeable to taste and smell, and have no injurious action on the teeth. After use, it should leave the teeth white, and a sensation of freshness and cleanliness in the mouth. As an antiseptic in this connection, nothing can displace boric acid. For years I have used the following powder, and can recommend it: Boric acid, finely powdered, 40 grs.; chlorate of potassium, 30 grs.; powdered guaiacum, 20 grs.; prepared chalk, 60 grs.;

powdered carbonate of magnesium, to 3j; otto of roses, half a drop. The boric acid in solution gets between the teeth and the edges of the gums, and there it discharges its antiseptic functions, the chlorate and guaiacum contribute their quota to the benefit of the gums and mucous membranes generally; the chalk is the insoluble powder to detach the particles of tartar which may be present, and the magnesia the more soluble soft powder which cannot harm the softest enamel."

ACTINIC CONTRAST IN PHOTO-MICROGRAPHY.—DR. GEORGE A. PIERSOL writes as follows in the *American Monthly Microscopical Journal*, for July, 1886 :

In many cases it is expedient to prepare objects especially for photography. For such cases a very valuable adjunct will be found in the use of different colored lights produced by tinted glasses, carefully adapted to the intensity and color of the staining. The use of glass, or of solutions of a color complementary to that of the object, has been long employed in the arts in reproducing paintings. Koch, in his *Traumatic Infective Diseases*, relates his experiences with this method, but condemns it as impracticable. On account of the length of exposure and vibration "the picture does not have sharpness of outline sufficient to enable it to be of use as a substitute for a drawing, or, indeed, even as evidence of what one sees."¹

Notwithstanding the unfavorable experience of this skilful investigator some subsequent results by this method have been most encouraging. Defrenne obtained excellent photographs of the *Bacillus tuberculosis* by means of fuchsin staining and green glass, and quite recently my own experience with this same bacterium and stain has been very gratifying. Since then a number of modifications have been tried. As a result of these experiments, the practical deductions have been reached that when the staining and thickness of the specimen are insufficient to give the necessary actinic contrast with the color of the field, we can best succeed by employing a colored glass, the tint of which will be such as to give the contrast as well as to afford light sufficiently to impress the plate where not occupied by the object. Such a color will not be the complementary one in many instances. With blue staining the use of the complementary yellow would yield but a faint image, since the weak actinic power of the transmitted rays are insufficient to affect deeply the unoccupied parts of the field. The substitution, however, of a suitable shade of green affords sufficient contrast of the object as well as permits the passage of rays of sufficient actinic power to impress adequately the surrounding parts of the plate.

With all these colors the exposure is greatly lengthened; with a medium green it being five to seven times longer than with blue light; as, however, the normal exposure is seldom over one second, the increase has practically little disadvantage. Not only for very minute objects, as bacteria, stained with methyl-blue, under high power, but equally for very thin haematoxylin or carmine sections under low amplification has this green glass proved most useful. By its use it is always possible to obtain pictures, where all the merits of vigorous negatives with the beautifully sharp details alone

¹ Magnin-Sternberg. *Bacteria*; 2d ed., page 195.

obtainable from the thinnest sections are combined, and where the usual methods yield but a weak image.

These suggestions apply especially to sunlight. To those engaged in such work, who have never employed these means, the shades of green offer themselves as valuable modifications of illumination well worthy of a trial. The exact tint required—a matter of importance—must be determined for existing conditions by each manipulator.

RESOLVENT SOLUTION.—DESCROIZILLES commends as a resolvent solution for local use in strumous enlargements in children the following mixture:

Sodium chloride	40 parts
Magnesium sulphate	15 "
Tincture of iodine	1 part
Distilled water	150 parts

Compresses are saturated with this solution and applied as needed.—*L'Union Médicale*, August 3, 1886.

FINAL RESULTS OF OPERATION FOR CANCER OF THE LIP.—Interesting statistics concerning the therapeutic results of the surgery of this affection, are collected from the clinic of Bruns, Tübingen, by A. WOERNER. An abstract in the *Centralblatt f. Chirurgie* states that of 305 cases operated upon at Tübingen, the affection occurred in females as compared to male patients in the relation of one to nine. The average age was 62 years. In 236 cases no mention is made as to the tobacco-smoking habits of the patients. Fifty-one were inveterate pipe-smokers. In eleven cases a trauma was the first origin; in seven cases neglected warts became the seat of the first start. In sixteen cases the upper lip was affected. Of the 305 cases 217 were operated upon by 354 different operations. Simple excision and union seemed sufficient in 224 cases; in 28 resection of the maxilla was necessary to total removal. An interesting statement is that one male patient, whose case was inoperable, and who was treated by electrolysis, developed a violent erysipelas. With the subsidence of this, the tumor had almost vanished. The man had no return and died one and a half years after from other causes. Of the 277 operated patients, recurrence of the malignant growth ensued in 111 persons; 87.2 per cent. recurred inside of a year, 128 after a year. Of the 160 cases that showed no return, 71, or 25.6 per cent., died from other causes, after an average duration of life after the operation of 8.4 years. The 89 that still lived averaged 5.8 years since the operation. Of the whole number, 160 cases, 106 lived over three years; hence the latter number certainly may be considered as permanently cured. Woerner also compares the previous reports on this subject made by Thiersch, v. Bergmann, Billroth, Kocher, etc. The sum of these observations is 866 cases. These patients show results very close to the figures of Woerner. Of the whole number of returns, 87.6 occurred within the first year. The percentage of those that survived three years without a return was 28.1 per cent., as compared with 38.2 per cent. at Bruns's clinic.

TREATMENT OF EPILEPSY.—WILDERMUTH, in the course of a long career at the head of an institution devoted to epileptics, has had occasion to make trial of all remedies of reputed value in epilepsy, and has finally

concluded that the treatment by bromides is indicated in the majority of cases.

In combating epilepsy, or, more properly speaking, the epileptic state, Wildermuth exhibits the bromide of potassium in the initial dose of thirty grains in children, and seventy-five grains in adults. The dose is gradually augmented to one hundred and twenty grains, and, very rarely, to one hundred and fifty grains.

The bromide is given in water or milk, and its exhibition is followed by physical exercise in order to decrease the likelihood of resultant gastralgia.

Iodides and chlorides are badly borne.

When medication is suspended, it is advised that the doses be gradually and slowly decreased.

The treatment may produce disagreeable consequences, which should be met more than half-way. The dental and gingival alterations are prevented by gargles of potassium permanganate, and cutaneous eruptions by the daily administration of Fowler's solution, lukewarm baths, and inunctions of Hebra's ointment. With this ointment, also, the eruptions of bromism are treated when they appear, and when they are very rebellious he does not hesitate to use the sharp curette.

The circulatory troubles incident to the bromine treatment necessitate cessation of the medicament, administration of coffee, shower-baths to the spine, and massage of the limbs.

When patients are very susceptible to the pure bromide of potassium, the daily ingestion of a wine-bottle or less of Erlenmayer's "bromized water" is to be preferred. The formula of this is as follows:

Potassium bromide,	
Sodium bromide ää gr. lx.
Ammonium bromide gr. xxx.
Liquor ammonia gt. j.
Carbonated water fʒxx.

In recent cases and in adolescents Wildermuth employs a somewhat smaller dose of the bromides, and adds one-tenth to one-thirty-third of a grain of atropine sulphate. In desperate cases he has used the osmiate of potassium, in doses of from one-seventieth of a grain to one-fourth of a grain, together with zinc oxide, according to the method of Herp.

He has seen no benefit from the use of curare or absinthe. The continuous current is chiefly of advantage in combating choreiform manifestations; the anode applied to the sternum, and the cathode to the spine. In subduing the psychical excitement, hydrotherapeutic methods have proven most useful; especially the moist pack and massage, gave favorable results in cases in which somnolence was very pronounced.

The dietetic regimen consists in the moderate use of meats, avoidance of spices, sobriety, and abstinence from tea and coffee.

The treatment of the access appears useless when the crises succeed each other rapidly. If they are more rare, he tries the wet pack, ice to the head, and a double or triple dose of bromide. Chloroform is discarded as unsafe, and chloral is reserved to combat the excitement in the intervals of the access. In cases where arrest of the heart is threatened, he commands the subcutaneous injection, in the thoracic region, of camphorated oil, up to the maximum dose of two fluidounces.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, August 6, 1886.

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SATURDAY, AUGUST 28, 1886.

ECLAMPSIA.

THE most notable contributions which have recently appeared on this important subject are the chapter on puerperal nephritis in Dr. PURDY's excellent book on Bright's disease, and a lecture by LEYDEN, "Ueber Hydrops und Albuminurie der Schwangeren," published in the *Zeitschrift für klinische Medicin*, Bd. II., Heft 1, 1886.

An examination of these papers justifies the following conclusions:

1st. That the majority of cases of puerperal eclampsia are accompanied by albuminuria or dropsy, or both, but a certain number are unaccompanied by either.

2d. That the majority of cases are associated with and are the direct result of kidney disease.

Thus, out of 135 cases of eclampsia collected by Brummerstaedt, of which 51 were fatal, there was albuminuria in 106, or less than 80 per cent.; in 29, or more than 20 per cent., it was absent. Again, according to Schröder (*Text-Book of Midwifery*, edition of 1884), from 3 to 5 per cent. of pregnant women have albuminuria; but of women in labor a much larger proportion have it—according to Flaischlen 17 per cent., to Würst 20 per cent., and to Mörike 37 per cent.; the proportion of albumen varying greatly and being often very small. According to Rosenstein out of every 8 cases of albuminuria in pregnancy 1 has eclampsia, and according to Schröder 1 woman out of every 500 confined has convulsions. It is evidently impossible to draw any further conclusions from these statistics than that, while not every case of albuminuria in pregnancy is going to be a case of convulsions, the presence of albuminuria makes it

more likely that there will be convulsions, a fact which is of great practical importance.

How is it with dropsy? Leyden very correctly says we know less of the relation between the albuminuria and the dropsy of pregnancy, although it is certain that the two do not stand in a necessary corresponding relation; and it is true, also, that anasarca is much more frequent in pregnancy than albuminuria, there being a not inconsiderable number of cases of cedema gravidarum without albuminuria, while it is equally true that albuminuria may occur without dropsy. Leyden is inclined to believe that where albuminuria and dropsy are both present, as a rule the dropsy precedes and the albuminuria follows, while Frerichs regards the albuminuria as preceding, in our opinion, rightfully, where the two conditions depend upon renal disease.

And this brings us to the second and most important of our conclusions—the relation of eclampsia to kidney disease. Both albuminuria and dropsy betoken some obstruction to the circulation in the kidney, and very early it was suspected that the kidneys were at fault. Such suspicion was soon justified by the results of autopsies, first by Rayer but subsequently by many others. The precise relation of the two conditions and the proportion of cases of albuminuria or dropsy, or both, in pregnancy, to alterations in the kidney, is still unsettled in the minds of many.

With a view of getting at this a little more precisely, let us return for a moment to the question of the relation of albuminuria and dropsy to renal disease. It has been said that both point to a derangement of circulation in the kidney, but this is not true of both in equal degree. We may say of albuminuria that in all cases except where it is due to pus from some part of the genito-urinary mucous surface, it is the result of such deranged circulation. But not so with dropsy. It is well known that we may have dropsy from obstruction to the circulation elsewhere than in the kidney, and such obstruction may occur in pregnancy, indeed it is much more prone to occur in pregnancy than in the non-pregnant state, by reason of the pressure exerted by the gravid uterus. This is a very different thing from saying that the renal changes are the result of the pressure exerted by the gravid uterus, which we do not at all believe. As the result of our belief, however, we regard dropsy without albuminuria in pregnancy as a much less serious symptom than either albuminuria alone or dropsy with albuminuria. Indeed, we may go farther and say that, where there is dropsy in pregnancy without albuminuria, we may conclude that the kidneys are not seriously involved, and that the danger of eclampsia is less, so well assured do we feel that, where there is renal disease in connection with pregnancy, the albuminuria must be pres-

ent either alone or in connection with dropsy. It is true that Bright's disease may occur in the non-pregnant state accompanied by very small albuminuria, or even without albuminuria. But in these forms of kidney disease the process is a very slow one as compared with Bright's disease the result of pregnancy, besides being, as a rule, of a different nature—being interstitial from the beginning; although some observations of Leyden, presently to be referred to, go to show that cirrhosis of the kidney may also result from pregnancy.

Reiterating that by far the largest proportion of cases of eclampsia are the result of renal disease, are we able to foretell the precise alterations—in other words, the form of Bright's disease—present? The most recent studies seem to necessitate some change of view as to the form of kidney disease present. Dr. Purdy gets over it very nicely by calling the disease puerperal nephritis, and his account of the morbid anatomy is very brief. For the purpose of treatment perhaps it is not necessary to be more precise. But the demands of modern medicine require us to be as precise as possible. Both Rosenstein and Bartels regard the disease as an acute parenchymatous nephritis. Undoubtedly many cases of puerperal nephritis are recognized in the stage of acute parenchymatous nephritis. In such there is blood in the urine, and blood casts, and much albumen. But at the stage at which death occurs and autopsies are obtained, it is more frequently the second stage of the disease which is found. Dr. Purdy correctly says: "Hemorrhagic extravasations are less frequent and pronounced than in other forms of acute nephritis, especially the scarlatinal form; yet patches of migrated blood corpuscles may sometimes be seen between the convoluted tubules and about the glomeruli. Epithelial cells lining the convoluted tubules are seen to be swollen, and in some places they have become fatty." Three out of four of Leyden's autopsies discovered fatty degeneration of the cells lining the tubes of the cortex—in a word, the second stage of chronic parenchymatous nephritis. The bloodvessels and interstitial tissue were intact. Leyden reports two cases with a view to showing that the Bright's disease of pregnancy may also be represented by the granular kidney. One case is based on the clinical history, which certainly coincides with that of granular kidney in general, the other is confirmed by autopsy. The pregnancy was normal, except that there was much sick stomach, until eight days before confinement, when swelling of the feet and legs with scanty urine was noted. The labor was natural. Eight days afterward, on rising, the patient noticed her feet swollen, but two weeks later the swelling had disappeared. Then followed a period of apparent health, except that the patient

was weak. Then followed morning sickness, headache, weakness, retinitis albuminurica, and the diagnosis of contracted kidney by the oculist consulted. Convulsions finally set in, and the next day the patient died, seven months after confinement. Might not both of these have been cases of previously existing granular kidney, or of the disease developed from its usual causes?

A most important question naturally succeeds the discussion of our second conclusion: Is eclampsia always associated with or dependent on kidney disease? In determining the correct answer to this question, there are many sources of error. In the first place, all negative observations prior to the careful use of the microscope, which has characterized the practice of the last twenty years, must be disregarded, as well as all negative observations of a later date based on other than microscopic examination of the kidneys. We fear this must be the fate of the 106 cases of eclampsia collected by Ingerslev, cited by Schröder, in none of which was there albumen, while at the autopsies the kidneys were found entirely normal. Cautiously, too, should be regarded a case cited by Leyden, as reported by Schulz in an inaugural thesis in 1867, in which the kidneys were found anatomically intact. But Leyden himself, in the paper referred to, says that, in a single case of fatal eclampsia from which the kidneys were sent to him for examination, he found nothing abnormal; and says also "the fact that eclampsia may go on to a fatal issue without the kidneys presenting any anatomically demonstrable alterations, is equally as true as that eclampsia may occur without albuminuria."

With such statements from such authorities we dare not, perhaps, deny the possibility of the occurrence of fatal eclampsia without accompanying Bright's disease, but we feel justified in asserting, emphatically, that such cases must not only be exceedingly rare, but even impossible where albuminuria is present, and, further, that to base any therapeutics on the supposition that such is the case, is almost criminal.

Such rare cases may be of the following kind. In the first place, there can be no doubt that we sometimes meet cases of puerperal convulsions without albuminuria or renal involvement which are analogous to the convulsions of teething or gastric irritation in childhood. They occur most frequently in primiparae, and often in prolonged labors, where the uterine tissues have been teased to such an extent by the pressure which has been exerted upon them, that the nerve centres with which they are in connection become excitable and explode in convulsions. It is not unlikely, too, that the nerve-centres of pregnant women are like those of children, physiologically more excitable than in the normal state. Such

cases are apt to have only one or, at most, two convulsions. It is not impossible, also, that occasionally one of these may terminate fatally, just as reflex convulsions from other causes terminate fatally. But, certainly, such terminations are exceedingly rare in this class of cases. Further, the whole category is so small that, in treatment, their special causes may be ignored, and the cases treated by bleeding and anaesthesia as though they were uræmic.

On the importance of the diagnosis by a study of the urine of an existing Bright's disease in a pregnant woman before labor sets in, it would hardly seem necessary to say anything at the present day, but for the fact that women continue to be sacrificed to neglect of such examinations, who might have been saved by a treatment directed to the complication.

FARADIZATION IN EXTRAUTERINE PREGNANCY.

THE questions raised by the letter of Mr. Tait in our issue of August 14th, give indication of exciting no little controversy; and we cannot refrain from thinking that he is a bold man to challenge so many obstetricians in this country, and so many in Europe, some of whom are acknowledged to be among the most distinguished and able in the profession. These gentlemen have asserted that they have made the diagnosis of extrauterine pregnancy prior to rupture of the gestation cyst, and have destroyed the life of the embryo or foetus, thereby arresting the pregnancy. Now it is true that in the great majority of cases the anatomico-pathologic proof is wanting, for, by electricity in this country, and by the evacuation of the cyst or by the injection of morphia in Europe, the pregnancy is arrested without detriment to the mother, and so there is no opportunity for an autopsy to verify the diagnosis. But there are five recorded cases of the diagnosis of extrauterine pregnancy during the life of the embryo or foetus which give conclusive proofs that Mr. Tait is mistaken in his view, for these cases were unquestionably correctly diagnosed at a period when, according to his statement, a diagnosis is impossible. In 1874, Tarnier diagnosed a case of extrauterine pregnancy which had advanced to between five and six months; he destroyed the life of the foetus by morphia, and the condition of the patient subsequently requiring laparotomy, the diagnosis was confirmed. Gaillard Thomas and the late Albert H. Smith have each done elytrotomy in cases diagnosed as extrauterine pregnancy, and the correctness of their opinion verified. Veit (*Zeitschr. für Geb. und Gyn.*, 1884 and 1885) has twice done laparotomy in cases of tubal gestation about the third month; both women recovered. Here are five very strong and stubborn facts, and until they are disproved Mr. Tait's assertion falls to the ground.

There is another of his statements which is at variance with demonstrated facts according to most authorities, to wit, that all extrauterine pregnancies are tubal. But the discussion occupies a large enough field for the present while limited to the first assertion.

TAKING THE TEMPERATURE IN CHILDREN.

A VERY ingenious and simple method has been proposed by FILATOFF, in the *Archiv für Kinderheilkunde*, vol. vii. part 3, for expediting the troublesome process of obtaining the temperature in children.

He recommends that by the use of a previously warmed thermometer the fall, and not, as is usual, the rise of the mercury be observed. In from one to two minutes the column is found to stop at a point which very closely approximates to the actual temperature of the patient. It is found that the higher the fever, the smaller is the error. Thus, at temperatures of from 103.1° to 104° F., the error does not exceed 0.2° F., while for lower temperatures it may reach 0.5° F. It is, of course, evident that a certain amount of care and skill is requisite in order that the precurory warming of the thermometer be neither insufficient nor excessive.

REVIEWS.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY FOR THE YEAR 1885. Vol. 10. 8vo. pp. 357. New York: D. Appleton & Co., 1886.

THE Society met in Washington, D. C., on September 22, 23, and 24, 1885, twenty-four out of the fifty-four active Fellows being present. Papers were presented by twelve Fellows, and by three candidates for election; we have only space enough to glance at a few of these. The President's annual address was entitled "Two Rare Cases in Abdominal Surgery." In this Prof. William T. Howard, of Baltimore, takes up particularly the difficulties in the differential diagnosis of morbid growths in the abdomen. The paper elicited an active discussion, Fellows of large experience admitting the great difficulties and uncertainties of abdominal diagnosis.

Dr. Henry J. Garrigues, of New York, presented an important paper upon "Puerperal Diphtheria," with a record of twenty-seven cases, only five of which terminated fatally. Dr. Garrigues has introduced several valuable prophylactic measures in the management of puerperal women in hospitals, of which his antiseptic pad is regarded as having greatly lessened their mortality, preventing the entrance of germs into the vulva and keeping the wards in a cleanly state.

Prof. Joseph Taber Johnson, of Washington, D. C., introduced the subject of oöphrectomy for reflex disturbances of the nervous system, by reporting four cases, three of which ended in entire cure and one died. As sixteen pages of the volume are taken up with the discussion, it will be seen that the applicability of Battey's operation is still upon trial.

Prof. Thaddeus A. Reamy, of Cincinnati, explained

his method of supporting the perineum by means of a towel carried around the buttocks and spread out over the seat with its anterior edge on a level with the fourchette, and its ends held tense, during each pain, by two assistants.

Dr. Edward W. Jenks, of Detroit, reported a fatal Cæsarean section, performed by him in Canada on February 27, 1885, after a labor of twenty-four hours, the fetus being dead, and the forceps and craniotomy having failed. The death in this case would appear to be largely due to the woman having got out of bed upon the floor during her sleep, producing a shock from which she never rallied. In the United States and Canada there have been twenty-nine fatal Cæsarean operations out of thirty-six in the last ten years.

Prof. William Goodell of Philadelphia, reported three cases of "Inflammation of the Parotid Glands following Operations on the Female Genital Organs," in which there were no evidences of septic poisoning. The operations were ovariotomies; the parotitis appeared to be due to metastasis and closely resembled mumps, except that its course was longer, and there was scarcely any rise of temperature.

Dr. Henry F. Campbell presented the subject of the "Genupectoral Posture" in a paper of seventy-five pages, with nineteen illustrations. The reputation of the Society is well sustained, but an addition of new Fellows would be of advantage.

SOCIETY PROCEEDINGS.

CANADIAN MEDICAL ASSOCIATION.

*Nineteenth Annual Meeting, held at Quebec,
August 18 and 19, 1886.*

(Specially reported for THE MEDICAL NEWS.)

THE nineteenth annual meeting of this Association was held in Laval University, Quebec, on the 18th and 19th of August. The meeting was opened, in the absence of the President, Dr. William Osler, by the Hon. Dr. Sullivan, of Kingston.

After routine business and the presentation of the reports of the various Sections, the PRESIDENT-ELECT, DR. T. K. HOLMES, of Chatham, Ont., was introduced, and delivered an address. After referring to the historic and romantic associations surrounding their place of meeting, he spoke of the influence exercised on medicine by the science of biology and its handmaidens, physiology and pathology. He recommended that the preliminary examination should have a more scientific complexion, and that biology should be added to the list of subjects required for examination. It is most important that the student, before entering on the study of medicine, should have some knowledge of minute organisms. He also alluded to the great importance of endowments in connection with the more purely scientific subjects taught in medical schools. Men holding these chairs could then be properly paid, and would be able to undertake original investigation free from the anxieties of practice. He advised practitioners to belong to local societies, and to keep careful notes of all the cases coming under their observation. In this connection, he observed that it is not necessary for a man to practise in a large centre, or to be connected with a school, in

order to do work. Jenner, McDowell, and Koch have been country practitioners. In conclusion, he advised the establishment of lectureships in connection with the Association, similar to those existing in the old world; and after hoping that the meeting would be a successful one, he predicted great things for the medical future of Canada.

OFFICERS ELECTED FOR NEXT YEAR:

President.—Dr. J. E. Graham, of Toronto.

Vice-Presidents.—For Quebec, Dr. Russell; for Ontario, Dr. Dupuis; for Nova Scotia, Dr. Wickwire; for New Brunswick, Dr. Currie; for Manitoba, Dr. Crowther.

Local Secretaries.—For Quebec, Dr. J. Bell; for Ontario, Dr. McKeough; for Nova Scotia, Dr. Trueman; for New Brunswick, Dr. Lunam; for Manitoba, Dr. Kerr.

Place of Next Meeting.—Hamilton; Chairman of Committee of Arrangements, Dr. Malloch.

SURGICAL SECTION.

WEDNESDAY, AUGUST 18TH.

DR. GEORGE E. FENWICK, OF MONTREAL,
IN THE CHAIR.

DR. DESJARDINS, of Montreal, read a paper on
KERATOSCOPY AS A MEANS OF DIAGNOSIS IN
ASTIGMATISM.

After defining the term astigmatism, he said that errors of refraction affect the vision injuriously, although the optic nerve be healthy. It was formerly supposed that the fault was in the lens, but it is now known to be due (as was first pointed out by Donders) to the curves of the cornea. The lens, according to later investigators, partakes of the same deformities as the cornea. Accommodation is not without influence on refraction. After mentioning that corneal anomalies are detected by the keratoscope, Dr. Desjardins exhibited and described an instrument of simple construction made by de Wecker and Masillon, by which the meridians and amount of astigmatism can easily be determined. Many cases of slight astigmatism can be rapidly detected and suitable glasses prescribed. By the aid of this instrument, one scarcely needs to submit the patient to a subjective examination, and for this reason the author finds it especially useful in children.

DR. JAMES BELL, of Montreal, read a paper on

TRACHEOTOMY IN MEMBRANOUS LARYNGITIS,

in which he advocated dispensing with the tube in the after-treatment of tracheotomy. He said that the methods of stitching the cut edge of the tracheal to the edge of the neck wound and the nose of the canula had proved of but little benefit in actual practice.

He preferred late to early operations in membranous laryngitis for the following reasons, viz.: (1) If patient were operated on early, many would be operated on unnecessarily; (2) Extension of membrane takes place more rapidly after tracheotomy; (3) If the obstruction is not rapidly produced, membrane is separated and expelled. The recoveries after early operations were 25-33 per cent.; after late operations, 5-10 per cent. A greater percentage recover without operation. He next entered on the question as to whether the extension of

the membrane is due to general or local causes, and thought that the weight of opinion is that extension is due to purely local causes, and gave a number of cases illustrating this point. After discussing the subject as to whether diphtheria is or is not primarily a local disease, he gave his reasons for not liking the tube in tracheotomy: (1) The tube never accurately fits; (2) When the tube is in place, the incisions into the trachea cannot be kept under observation; (3) Occasionally the tube, from not being in the middle line, and being left too long in the trachea, ulcerates through, and an artery may be opened; (4) When the tube is in the trachea, there is difficulty in expelling through it pieces of membrane; (5) The tube causes sometimes exuberant granulations and warty growths. In place of the tube, Dr. Bell has devised an instrument which he thinks does away with the objections to the tube. It consists of a pair of "clips," which catch the edge of the trachea and hold it apart. They are held in position by a tape which goes round the neck. He had experimented with the clips in a number of dogs, and found that they held well and that no ill results followed.

In speaking of the place of operation, Dr. Bell stated that he preferred the low operation, because there was more room, and also because, by it, we get further away from the disease. In the after-treatment of cases in which the "clips" are used, he withdraws the mucus, etc., from the trachea by means of a glass pipette. He said he did not believe in the close camp bed which is now so often used, but preferred a free current of air. After operation he plugs the trachea or larynx above the wound with antiseptic sponge; this absorbs the discharges and helps to localize the membrane. Over the wound he keeps a piece of gauze, and he occasionally introduces vaseline into the trachea. When the tube is used, after two or three days the breathing becomes dry, and the end of the tube becomes coated with inspissated mucus; below this, in the trachea, is a cone of dried exudation, which helps to block up the passage.

Dr. Bell gave the histories of two cases of diphtheria in which he had operated and used his "clips." One case died, and the other—aged twenty-five months—recovered. In nine cases of tracheotomy in which he has used the tube, all, with one exception, died.

He summed up by saying that the excessive mortality after diphtheria was due to defects in the after-treatment. The presence of a tube is a source of irritation and prevents the application of remedies to the trachea itself.

DR. A. L. SMITH, in the discussion which followed, said that when house surgeon to a children's hospital in London, he had a large experience with cases of tracheotomy. He believes that the "clip," introduced by Dr. Bell, will prove of the greatest possible benefit and will in all probability reduce the mortality after the operation. He had seen one death from ulceration of the tube into a large vein.

DR. KERR, of Winnipeg, said that he had considerable experience in tracheotomy whilst in Nova Scotia. He had performed it twelve times, and never had a good result. He did not think that tracheotomy is a good operation, and had seen most desperate cases recover without it. If Dr. Bell's treatment without a tube

reduced the mortality, it would be a great gain. Dr. Kerr went on to say that the after-treatment of tracheotomy is always a source of anxiety; the tube is apt to get displaced during fits of coughing. In his last case he dispensed with a tube and stitched the edge of the cut trachea to the edge of the wound, as recommended by Post. He did not like this method, for when the patient's chin was depressed, the opening closed. He thought that with Dr. Bell's instrument he could do better. As to the question of the general or local origin of diphtheria, it was too large a subject to discuss at the present time. His last tracheotomy case lived three weeks and died of paralysis, so that it is not always the extension of the membrane that kills after tracheotomy, and the best after-treatment will fail to produce a good result. He was very doubtful about the good that would result from plugging the trachea above the wound.

DR. F. J. SHEPHERD said that he had performed tracheotomy a number of times both in hospital and private practice. His first ten or a dozen cases were all fatal, but during the last two and a half years he had performed tracheotomy in private practice sixteen times, and had had five recoveries. In hospital practice his results were not so good. He thought that the kind of instrument used did not matter much; it was important that the wound should be kept aseptic. He removed the tube as early as possible, never later than the fifth day, in one successful case he removed the tube on the third day; they were all cases of diphtheria. He preferred the low operation because the trachea is opened at a greater distance from the disease, there is more room, and it is not necessary to cut the cricoid cartilage. In the high operation division of the cricoid had to be frequently undertaken and often resulted in necrosis. Again, stenosis more frequently occurred after the high operation. Dr. Shepherd believed that after operation it was useful to have a warm room (75° – 80° F.), and that the atmosphere should be saturated with moisture. He always used a croup or closed bed, and the steam of the kettle was conveyed into it by a huge spout. The inner tube was removed every hour and the outer one on the second day, lime-water was occasionally dropped into the tube. He thought that the tube favored expulsion of membrane. With regard to the antiseptic plugging of the trachea, he did not think it of much benefit. Very often the membrane extended, at the time of the operation, below the wound, and if it did not, the continuity of the mucous membrane could not be interfered with. He had never seen the conical plug in the trachea described by Dr. Bell. All the cases of death after tracheotomy he had seen had been due to extension of the membrane. Theoretically Dr. Bell's instrument was perfect, but it remained to be seen what it would do in practice.

DR. RUSSELL, of Quebec, had not seen half a dozen cases of diphtheria in twelve years, but during the last year he had seen a great many cases of membranous croup. He thought this disease was more fatal than diphtheria. He was formerly opposed to tracheotomy, but now thought early operation advisable; if the operation did not cure, it always relieved. He had performed tracheotomy six times with two recoveries. He thought Dr. Bell's instrument was a most ingenious one, and likely to prove very useful. In the after-treatment he was strongly in favor of using lime-water spray.

DR. FENWICK, of Montreal, said that he preferred the high to the low operation. Dr. Bell's instrument appeared to answer very well. Dr. Marshall Hall, many years ago, devised a somewhat similar instrument made of wire. He had seen one of Dr. Bell's cases treated with the "clips," and formed a most favorable opinion of the instrument.

DR. FENWICK, of Montreal, read a paper on

TREATMENT OF TUBERCULOUS GLANDS OF THE NECK.

He believed that scrofulous glands are intimately connected with tubercle. After giving a sketch of the history of tubercle and Koch's discovery of the tubercle bacillus, he said that there must be some predisposing condition in the individual so that he can contract tubercle—the proper soil must be present. The glands of the neck are especially liable to infection, especially the submaxillary and those over the large vessels. Enlargement is rarely single and occurs generally at first on one side of the neck only. Often there are no external signs of softening of the gland, but when the glands break down and open externally indolent ulcers and sinuses are left. The disease generally first shows itself in a single gland and then spreads to other parts; very little is known of the mode of entrance of the tubercle bacillus. In scrofulous enlargement of the glands of the neck the author strongly advised early removal of enlarged glands. After removal the general health of the individual improves; if they are left, the patient runs the risk of general tuberculosis, and if he recovers it is with impaired health and a number of disfiguring scars on the neck. The author preferred removal to laying open and scraping out the gland or the cautery puncture of Mr. Treves. He related a number of cases in which he had removed large numbers of glands from the neck. In his first case, which was operated on in 1873, he removed some half dozen glands from the neck beneath the sterno-mastoid; the scar was now hardly to be seen. Dr. Fenwick showed a number of photographs of cases, before and after operation, where the results were most admirable, the cicatrices being hardly perceptible.

DR. KERR, of Winnipeg, said that if we accepted the principle of the identity of scrofula and tubercle much confusion would be removed. He was not satisfied with the results of operations and did not now operate so often as formerly; he found the operation not only very tedious but difficult and dangerous, and the results were not always so good as represented. Dr. Alexander, of Liverpool, who formerly operated some twelve years ago very frequently in these cases, has now given up the operation.

DR. SHEPHERD, of Montreal, confessed that the results of operation were not always so perfect as were described by the enthusiastic advocates of the operation, but in many cases the results are entirely satisfactory. Occasionally there are high temperatures after operation; sometimes attacks of cellulitis. He had operated in a good many cases, and had removed as many as twenty to thirty glands at a time. Apparently solid glands not infrequently come to pieces during removal, and are found to be quite soft in the centre. These conditions always complicate the operation. After incising the deep fascia, he prefers removing the glands with the fingers, and an occasional cut with a knife.

He has never had any accident attending the operation. Although he has had no experience with Treves's cautery puncture, he does not think it suitable for glands deeply placed. In sinuses and scrofulous ulcers, he has had most excellent results from scraping out the parts with Volkmann's spoon.

DR. TRENHOLME, of Montreal, read a paper on

SOME DETAILS OF UTERINE AND OVARIAN OPERATIONS.

He said the instruments used in these operations need not be numerous or complicated. After describing the usual precautions that should be taken regarding the cleanliness of hands, sponges, and instruments, he said that he prefers No. 1-20 shoemakers' thread to any other form of ligature. Before use the thread should be immersed for twenty-four hours in pure carbolic acid, and not put into water at all. In closing the abdominal wound, he uses silver wire for the deep sutures and horsehair for the superficial. He laid great stress on the importance of not enclosing any muscular tissue in the suture. The incision should be midway between the umbilicus and pubis, and should not extend to within one and a half inches of the pubis. He advised short incisions of two to two and a half inches. Muscle should never be cut in the incision, as it gave great trouble afterward.

The pedicle of the tumor should be ligated in small segments, and the large vessels should be ligatured separately and the ligature cut short. The cavity of the abdomen should be thoroughly cleansed with sponges, and drained when necessary. He objects to abdominal bandages, and has only used them after the removal of the largest tumors. He allows his patient after the operation to move freely in bed; this favors the reposition of the bowels. In uterine fibroids, when large, he always divides the mass in the median line, then each half is enucleated. The stump should be cut in shape of a V, and the edges brought together with a running suture and quilted with the shoemaker's stitch. He has found linseed-tea enemata of great service after operation; fomentations to the abdomen were also very beneficial. No after medicinal treatment is needed, except when there is vomiting; in this he has found sipping hot water useful, and also ipecacuanha in homœopathic doses. He uses the third dilution.

DR. MACFARLANE, of Toronto, would have liked to hear Dr. Trenholme say more about dietetics. In his operation he had found vomiting to be a very troublesome complication; warm water with a flavoring of brandy he had found of great service in these cases, also frequent small doses of epsom salts as recommended by Lawson Tait. He never gave any medicine at all when there was any threatening of peritoneal trouble. He never used drainage unless the adhesions were extensive.

DR. SHERMAN, of Ogdensburg, would like to have heard more details regarding the preparation of the patient, also as to whether he referred, when speaking of fibroids, to extra- or intra-mural growths.

DR. MACDONALD, of Wingham, Ontario, would like to have heard more details as to the closure of the wound and also as to the value of the clamp in securing the pedicle and whether operation for ovarian tumors should be performed early.

DR. KERR, of Winnipeg, had seen hernia follow the

operation, due to failure of union in central portions of wound. He would like to know why Dr. Trenholme objected to including muscle in his sutures.

DR. SHEPHERD, of Montreal, thought that wounds of the abdomen are much the same as wounds of other parts, and that abdominal surgeons make a great ado about their special methods of healing this abdominal incision. General surgeons who are operating every day in every part of the body have no fear of including muscle in their sutures. He did not understand why an abdominal wound should heal so differently from wounds in other parts. So far as he himself was concerned, in performing abdominal section he treated his incision as an ordinary wound. He used silk or catgut sutures and passed them through the whole thickness of the wall of the abdomen; union invariably took place by first intention. Every gynecologist thinks it incumbent upon him to have some special mode of treatment of the abdominal incision, and seems to think that general surgical principles are not applicable to it. Dr. Shepherd had not much faith in ipecac used in the third dilution.

DR. FENWICK said that he had operated a number of times for ovarian tumors with fair success. He agreed with the remarks of the last speaker. He always used silk sutures and objected to horsehair because knots made in it did not hold well. In treating the pedicle he first clamped it and then tied all the large vessels; afterward, he tied the pedicle with the Staffordshire knot and removed the clamp. He had used hot water occasionally to cleanse the abdomen.

DR. TRENHOLME, in reply, said he spoke of interstitial fibroids. He formed the pedicle out of the labial borders of the uterus in such a way that he left the broad ligaments to sustain the pelvic viscera. He used the shoemaker's stitch to secure primary union. With regard to the external wound, he thought that the conditions found in the abdominal cavity existed nowhere else. It is of the greatest importance to secure primary union so that there shall be no subsequent hernia. For vomiting he used hot water over the wound, and ipecac in minute doses. In preparing the patient he avoided purgatives as much as possible. In cold weather he kept the extremities of the patient wrapped up in cotton-wool.

DR. SHEPHERD, of Montreal, next read a paper on

EXCISION OF THE TARSUS IN TUBERCULOUS DISEASE OF THE BONE.

He commenced by saying that formerly when there was carious disease of the bones of the foot the only resource was amputation, but with the advent of anti-septic surgery and the establishment of conservative principles of treatment, other methods of procedure have been adopted with success.

In cases of tuberculous and carious disease of bones the necessity for amputation is not immediate, and it is the duty of the surgeon to endeavor first to remove the local disease before sacrificing the foot. It is not necessary to perform a Hey's, Chopart's, or Syme's amputation in these cases, but merely to remove all the disease, however extensive. The reader of the paper illustrated this principle by giving the histories of several cases. In one case, where there was disease of both feet, he removed on the right foot the cuneiform,

scaphoid, cuboid, and bases of the metatarsal bones, and on the left the lower end of the tibia, astragalus, part of the os calcis, the scaphoid, and cuboid. The result was excellent, and the patient, a girl, aged seventeen, was able to walk about comfortably. In children it is often sufficient to remove the diseased portion with a Volkmann's spoon, and in them amputation is hardly ever required.

DR. MACFARLANE, of Toronto, had followed out the principle advocated by the reader of the paper for years. He believed it is the proper method of treatment and should be extended to caries of the spine. In dressing the wound left after excising tarsal bones he never stuffed the wound with anything, but placed the foot in a good position and left the rest to nature.

DR. DUPUIS, of Kingston, said he recently had a case of disease of all the tarsal bones in which he performed amputation; afterward the tibia necrosed and he had to reamputate. He also reported a case of frost-bite in which he had removed the greater part of the tarsus.

DR. HOLMES, of Chatham, remarked that Dr. Shepherd's paper was a good exemplification of conservative surgery. He had several times excised the ankle-joint with the best results.

DR. KERR, of Winnipeg, said that patients, after operation, should not be allowed to walk about too soon, as they were apt to have a splay foot. He did not believe in leaving the wound to nature altogether, but preferred keeping it in an aseptic condition.

DR. RUSSELL, of Quebec, also insisted that the wound should be carefully protected and that antiseptic dressings should be applied. If the wound were left to nature, it would soon become putrid and all the dangers incident to such a condition would be incurred.

DR. FENWICK said he could mention a number of cases in which he had resected the tarsus with the happiest results. He related the case of a gentleman (a medical man) who had been wounded at the battle of the Alma, and had carried the bullet in his heel for nearly thirty years. The os calcis was trephined, and the bullet removed, with result of a rapid closure of the cavity and a useful foot.

DR. KERR, of Winnipeg, read a paper on the

EVACUATION OF AN ABDOMINAL HYDATID CYST.

The patient was an Icelander, who came into the Winnipeg Hospital last winter with a large abdominal tumor. From the history, and as the result of exploratory puncture, the attending physician, Dr. Whiteford, made the diagnosis of hydatid cyst, and handed the case over to Dr. Kerr, for operation. The operation was performed in two stages, as recommended by Volkmann. A cut was first made down to the growth, and six days after it was incised. To open the cyst, he had to cut through two inches of the liver. The cyst was then emptied, and washed out with a solution of iodine. The patient did well, and went home in two months. He remarked that these are rare cases. Up to 1880, only 155 cases have been reported. This is the second case that has been seen in the University Hospital. The other patient was operated on, but died on the table.

DR. ECCLES, of London, Ont., related the history of a case which had been treated a year ago in the London Hospital.

THURSDAY, AUGUST 19TH.

DR. KERR reported two cases of

GUNSHOT WOUND OF THE HIP-JOINT.

Both cases were caused by the accidental discharge of small shot. The soft parts were much torn, the trochanters in both cases were split and the joints laid freely open. In the first case the patient was not seen till three weeks after the accident, and had had no treatment; his condition was deplorable. The whole wound was in a sloughy condition, and horribly fetid. The patient was in a septic condition. The wound was thoroughly cleansed, the sphacelated portions freely excised, and the wound irrigated and packed with iodoform gauze; an anterior wire splint was also applied. The improvement at first was marked, but the patient died of septicæmia and exhaustion in a short time. The second case was seen immediately after the accident; the wound was treated in the same way, and the limb fixed in an anterior Smith's splint; a posterior splint was also employed, so that immobility was secured, and recovery with a useful limb resulted. Dr. Kerr referred to other methods of treatment, viz., excision and amputation. In these cases the mortality was high. He brought these cases before the Section in order to show what could be done by conservative methods in such cases.

DR. CLARKE, of Toronto, said that a number of cases of gunshot injuries of the hip were reported in the *Surgical History of the American Rebellion*. He had seen several cases treated when with the Federal army in Virginia. They were treated under canvas, and did well.

Drs. Russell, Fenwick, and Shepherd also joined in the discussion.

DR. BULLER, of Montreal, read a paper on

THE TREATMENT OF ACUTE PURULENT OPHTHALMIA.

He remarked that eyes are now seldom lost in these cases. Some use hot applications, others cold; some use astringents, others do not; some use antiseptics, others rely on frequent and thorough washings. All are agreed on the necessity of frequently cleansing the diseased eyes. Many remedies are used, as quinine, boracic acid, corrosive sublimate, etc. The antiseptic treatment is still on trial. Solutions used as germicides must be strong, weak solutions are of little value as antiseptics. He had lately treated three cases of acute gonorrhœal ophthalmia. He first used boracic acid and afterward a solution of corrosive sublimate, the latter in the strength of 1:2000 without improvement, but the application of a solution of 1:1000 was followed by immediate and marked improvement. The patient was discharged cured in twenty-four days. In the other case the patient was a child, aged three years, with acute vaginitis; under similar treatment patient rapidly recovered.

In the third case, also one of gonorrhœal ophthalmia, there was sloughing of the cornea. He treated it by hot fomentations and washes of boracic acid and sublimate solution used warm. Improvement immediately followed, the slough separated and a clean ulcer was left which soon healed.

Dr. Buller thinks that in general practice a rigid cleanliness is not sufficiently carried out. With regard

to cold applications, he thinks they are the best, but whilst applying them the cornea should be closely watched; if there is any cloudiness, hot applications should immediately replace the cold, and the cornea will be saved.

DRS. SMITH, RUSSELL, and FENWICK took part in the discussion which followed.

DR. SHEPHERD, of Montreal, read the notes of a case of

AINHUM,

which he had treated in the Montreal General Hospital. The disease affected the little toe of the right foot of a negro, at. forty-seven, born in North Carolina. The little toe became affected some six years before. He first noticed a small ulcer on the digito-plantar fold, then a constriction surrounded the toe at this point which gradually deepened. The toe was much larger than normal. He suffered greatly when walking. The toe was amputated and on dissection appeared to consist of much thickened skin and fibrous tissue. The bones of the toe were much atrophied and the joint had disappeared; the proximal phalanx looked somewhat like a claw. The reader of the paper then gave a short sketch of the history of the disease, saying it was first accurately described by Dr. Silva Lima, of Brazil, that it was a disease confined to the dark races, and was more common in some families and more in men than women. It sometimes affects the fingers and even limbs. The disease, if left to itself, lasts about ten years and ends by amputating the member affected. The word "ainhum" is a negro word, and means "to saw."

DR. FENWICK, of Montreal, reported a case of

AMPUTATION AT THE SHOULDER-JOINT FOR MYELO-SARCOMA OF THE ARM.

Patient, a woman, aged forty-seven years, seven months pregnant, came to Montreal General Hospital in the spring of the present year, with a large ulcerated tumor a little below the shoulder of the right arm, and a smaller tumor near the biceps. Two years ago she had received a blow, and within three weeks perceived a small lump at the site of injury. It grew rapidly and was removed. She was told that it was a fatty tumor. It soon returned, and this time plasters were applied by a "cancer doctor," which burnt the tumor, and caused the ulcerated appearance which was seen when admitted to hospital. Dr. Fenwick amputated the arm at the shoulder-joint, and patient did remarkably well, never having a temperature higher than 99° F. On examination, the tumor proved to be a myeloid sarcoma. This was the first case Dr. Fenwick had seen in which the myeloid tumor first affected the tissues external to the bone and periosteum.

DR. A. LAPTHORN-SMITH read a paper on

ALEXANDER'S OPERATION, AND THE TREATMENT OF DISPLACEMENTS OF THE UTERUS.

After describing the operation minutely, and also giving a discourse on the anatomy of the parts, Dr. Smith went on to say that the round ligaments are really muscles, and are not in a state of tension, except during coition. They are the homologues of the cremaster muscle in the male. Dr. Smith considered that the risks of the operation are great, and that it is not a justifiable one, except in extreme cases, and

when performed did not permanently cure displacements of the uterus. He prophesied that it would soon fall into disuse. The author said that displacements of the womb could be corrected by lessening congestion, by keeping the liver clear and the lower bowel empty. The paper was illustrated by diagrams and tables.

DR. TRENHOLME agreed with Dr. Smith that the operation was one that would soon be known only in history. He had operated once, but had failed to find the ligament. He himself, many years ago, suggested a similar operation.

DR. SHEPHERD had frequently dissected the round ligament, and had performed operations on the dead subject. The uterus could be easily elevated by pulling on the ligaments. He did not think the fact that a few muscular fibres had been found on the ligament proves that it is now in active use as a muscle; it is, rather, a foetal remnant of the ligament of the Wolfian body, and the homologue of the gubernaculum testis of the male.

DR. AHERN, of Quebec, said that the round ligament is frequently abnormal, and that at its insertion is often much atrophied. In cases where the uterus is fixed, tightening it will not correct displacements.

The Section then adjourned.

CORRESPONDENCE.

WESTERN DRESSED BEEF.

To the Editor of THE MEDICAL NEWS,

SIR: Possibly it might be of interest to the readers of THE MEDICAL NEWS to hear something on the subject of a healthy beef supply.

I have been spending some time on cattle ranches of the Dakota Bad Lands, and became particularly interested in the results obtained by the Northern Pacific Refrigerator Car Co. Its president, the Marquis de Mores, has planned most skilfully, after years of practical study, a very complete system of killing and packing beef on the cattle range, and delivering it in perfect condition to the retail shops of the Company in New York. From a description of his methods it can be seen how well the element of healthfulness is preserved to the product. Others are following similar plans to the great gain of the consumer.

The question how to get clean meat—meat free from the many evil effects incident to transportation—seems to be solved by killing and dressing the beef in or near its natural home, and sending it direct to the shops. The grave importance of this is awakening much wholesome discussion among thinking people, and should be especially considered by the teachers of preventive medicine.

I need not enlarge upon the manifold opportunities for disease and injury to live cattle during transit. These are obviously many, and certain to occur, varied by accidents and the weather. In transit to the Eastern market cattle are upon the train for about ten days, huddled together as closely as possible, terrified, ill fed, consumed with thirst and fatigue. The gross shrinkage on each steer is estimated at ten per cent. of its actual weight. To this must be added ten pounds of bruised flesh trimmed away. The skilled pathologist alone can describe the wretched state of the organs of such crea-

tures, and the consequent unfitness of their other tissues for human food. On the other hand, that animal which can be driven comfortably from its customary feeding grounds to a properly equipped slaughter-house, killed, and dressed under favorable conditions, and the flesh forwarded direct to the consumer surrounded by uniform conditions of temperature and dryness, is surely better qualified to fulfil its destiny as food.

The plan pursued by the Marquis de Mores is, in outline, this: He takes the cattle from his own ranges lying hereabout, and after a drive of a few miles allows them to rest for a day or two. They are then killed, in such numbers as his retail shops demand, by a process of "pithing." A powerful spear is driven from above through the junction of the medulla and cerebellum. Death is instantaneous. They are at once dressed in a very large airy room; the carcass thoroughly cleaned, and placed in a cooling room for forty-eight hours at a temperature of about 38° F. By an ingenious arrangement of ventilation this room is maintained in so dry and clean a condition that the meat becomes actually dry to the touch. The gaseous exhalations, etc., are precipitated into the melting ice, whence they are carried in solution. In this room one can strike a match on almost any surface, so complete is its dryness, and the air is practically free from any odor. At the end of forty-eight hours the carcasses are packed in the refrigerator cars, models of cleanliness, at a lower temperature than that of the packing-room—about 34° F., and the cars are very carefully maintained at this temperature till they have arrived at the shops of the Company in the East for distribution directly to the householder.

In this way the eleven middlemen, through whose hands cattle usually pass before the dressed meat reaches the cook, are dispensed with. The financial aspect of the enterprise bids fairly for success, and the beef is certainly of better quality than that which is so unfortunate as to be much handled. The shops referred to have a limited capacity, and all beef is sold out at once at very reasonable rates. This enables the Company to maintain a steady and accurate rate of production. The details of this enterprise are of great interest, but I have said enough to give your readers an idea of how clean, wholesome beef can be had at a low cost.

Yours respectfully,

J. MADISON TAYLOR.

MEDORA, DAKOTA, August 15, 1886.

SIMPLE METHOD OF ADDING NITRIC ACID TO URINE IN TESTING FOR ALBUMEN.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of July 24th, on pp. 96 and 97, I notice that the "Albumen Test Committee," in their report to the Clinical Society of London, favor the use of nitric acid in testing for albumen and describe nitric acid "as being most reliable and delicate."

In no work on urinalysis, nor in any of the journals, have I seen mentioned the following method of adding nitric acid to the urine, and this method I have employed for some time.

We must first bear in mind that the specific gravity of normal urine ranges from 1.015 to 1.022, though some authors place it as low as 1.005 and as high as

1.030. Now the specific gravity of nitric acid (U. S. P.) is 1.420 and dilute nitric acid (U. S. P.) is 1.059, each being greater than that of normal urine. To test the urine for albumen, pour into a test-tube of medium size enough urine, so that there shall be a column 2 or 2½ centimetres in height; then with a pipette or small tube take up a column of nitric acid 3½ centimetres in height, or, in general, let the column of acid be a little higher than the column of urine (so better to notice the displacement of the fluids). With the finger firmly pressed against the upper end of the pipette or tube, pass the latter to the bottom of the column of urine still keeping the finger pressed against the upper end; the fluids will mix according to the force of their specific gravity—*i. e.*, the nitric acid will gradually flow to the bottom of the test-tube and the urine will rise in the tube to the height at which was the nitric acid. By this method we can more easily and more clearly notice any turbidity which may be formed and without any agitation of the fluids. The same method can be followed in using acetic acid (U. S. P.) which has a specific gravity of 1.048, or the glacial acetic acid which has a specific gravity of 1.056—1.058.

Respectfully yours,

E. H. TROWBRIDGE, M. D.

601 CONGRESS ST., PORTLAND, ME.,

August 18, 1886.

NEWS ITEMS.

DR. OLIVER WENDELL HOLMES sailed from Liverpool last Saturday on the steamship "Aurania," and is expected in New York to-morrow.

THE UNIVERSITY OF THE CITY OF NEW YORK has conferred the honorary degree of M.D. upon Mr. Lawson Tait.

AMERICANS AT THE MEETING OF THE BRITISH MEDICAL ASSOCIATION.—Among the Americans registered as present at the meeting, we notice the names of Drs. T. A. Emmet and Fordyce Barker, of New York; J. S. Billings, of Washington; Wm. Brodie, of Detroit; J. R. Chadwick, of Boston; N. S. Davis, of Chicago; Frank Donaldson, of Baltimore; Chas. Warrington Earle, of Chicago; H. O. Hitchcock, of Kalamazoo; F. H. Hooper, of Boston; Howard A. Kelly, of Philadelphia; W. T. Lusk, of New York; Hunter McGuire, of Richmond; R. B. Maury, of Memphis; W. H. Pancoast, of Philadelphia; W. F. Peck, of Davenport, Iowa; S. J. Radcliffe, of Washington; H. P. C. Wilson, of Baltimore; James C. Wilson, of Philadelphia; and W. Gill Wylie, of New York.

THE VOLTA PRIZE.—The Volta prize of 50,000 francs will be awarded by the Paris Academy next year for the most worthy discovery in the province of electro-technics in its application to chemical, technical, or therapeutic uses. The theses must be presented by June 30, 1887.

THE BRIGHTON PRIZE of two hundred dollars for the current year has just been awarded, by the committee appointed for that purpose by the President and Fellows of Harvard University, to Dr. Charles F. Withington, of

Boston, for an essay on "The Relation of Hospitals to Medical Education."

THE LIEBIG MONUMENT FUND amounts to 25,000 dollars, and the monument will be erected in Ziessel, a small Hessian University town, where Liebig first won fame as a lecturer on chemistry.

DANGEROUS LEMONADE.—A style of lemon-squeezer has been recently sold quite extensively which is made of galvanized iron, or iron covered with a coating of zinc. A word of caution should be given against the use of such articles, as the citric acid of the lemon will readily dissolve the zinc, forming unwholesome and poisonous salts. Lemon-squeezers should be made either of plain iron or wood, or, better, like some we have observed, where the surfaces brought into contact with the fruit are of glass or porcelain. Zinc is a metal which is readily attacked by the weakest acids, and no article of food or drink should ever be allowed to come into contact with it.

TO DISTINGUISH OLEOMARGARINE FROM BUTTER.—J. Horstler recommends the following procedure: A piece of oleomargarine the size of a hazelnut is placed in a test-tube, and the end made air-tight. Into another test-tube a like quantity of butter is treated in the same way. When both test-tubes are held in the hand, the oleomargarine soon liquefies, forming a clear solution; whilst butter requires double the time for solution, and when dissolved is not so clear as the oleomargarine solution. When the tube is filled one-third full with ether, the oleomargarine is easily dissolved, and does not produce any turbidity or precipitate on the addition of alcohol. Butter when treated in like manner yields a precipitate.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The Fourteenth Annual Meeting of the American Public Health Association will be held at Toronto, Ont., Oct. 5-8, 1886. The Executive Committee have selected the following topics for consideration at said meeting:

I. The disposal of the Refuse Matters of Cities and Towns.

II. The Condition of Stored Water-supplies, and their Relation to the Public Health.

III. The Best Methods and the Apparatus Necessary for the Teaching of Hygiene in the Public Schools, as well as the Means for Securing Uniformity in such Instruction.

IV. Recent Sanitary Experiences in connection with the Exclusion and Suppression of Epidemic Disease.

V. The Sanitary Conditions and Necessities of School-houses and School-life. (See Lomb Prize Essays.)

VI. The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the best Means and Appliances for Preventing and Avoiding them. (See Lomb Prize Essays.)

VII. Plans for Dwelling-houses. (See Lomb Prize Essays.)

All persons who propose to present papers at the next meeting of the Association will be governed by the following order, enacted by the Executive Committee at Washington, D. C., Dec. 7, 1885: "That all papers hereafter presented to the Association must be either printed, type-written, or in a plain handwriting, and be

in the hands of the Secretary at least twenty days prior to the annual meeting."

THE INTERNATIONAL MEDICAL CONGRESS AND THE BRITISH MEDICAL ASSOCIATION.—At the meeting of the Council of the British Medical Association held on Tuesday, August 10, the following letter was read from representatives of the Organizing Committee of the International Medical Congress, requesting facilities for communicating with the members of the British Medical Association on the subject:

"We, the undersigned Officers and Members of the Executive Council of the International Medical Congress, to be held in Washington, U. S. A., on the 5th to 11th of September, 1887, desire to take this opportunity of communicating to members of the medical profession in Great Britain, and especially to members of the British Medical Association, some of the arrangements for the reception at that Congress, and to extend to them a cordial invitation to visit our country and to attend the Congress.

We shall be greatly obliged to you, and to the Council of the British Medical Association, if you could afford us facilities for this purpose; and we would ask of your courtesy to allow us the use of a room in the Pavilion, at a stated hour on Thursday next, if convenient, for the purpose of meeting members of the Association, to whom we could make a statement on the subject.

We are, Dear Sir, Your faithful servants,
N. S. Davis, M.D., LL.D., President of the Preliminary Organization of the Ninth International Medical Congress, and member of the Executive Committee, and Ex-President of the American Medical Association.

Wm. Brodie, M.D., Vice-President of the Congress, and late president of the American Medical Association.

Wm. H. Pancoast, M.D., etc., Vice-President of the American Medical Association; Member of the Executive Council of the International Congress, 1887.

Wm. C. Wile, M.A., Vice-President of the American Medical Association."

On motion, it was resolved "that the request be granted."

SIR JAMES PAGET AND THE INTERNATIONAL MEDICAL CONGRESS.—*The Lancet* having announced, in its issue of Aug. 7, that Sir James Paget was likely to attend the Washington Congress, says in its issue of the following week that it was in error in so stating. It, however, "still hopes that one who would be so much missed will find his way to Washington."

LIQUIDS BY MAIL.—The decision of the Postmaster-General recently promulgated, admits to the advantages of mail carriage and distribution many articles heretofore forbidden. The following abstract of Order No. 135 will be sufficient to exhibit the scope and the excellent provisions of the new regulation:

Liquids and oils (not to exceed four fluidounces), pastes, salves, or articles easily liquefiable must be enclosed in a wooden or *papier maché* block, not less than three-sixteenths of an inch thick in the thinnest part, strong enough to support the weight of mails piled in bags and resist rough handling. Between the bottle and the block must be some absorbent, such as cotton, felt, asbestos, cork crumbs, in order to prevent damage to other parcels. The top of the block must have a metal or wooden screw lid fitting tightly and have rubber pads.

Articles not liquid must be placed in a bag, box, or removable envelope or wrapping made of paper, cloth, or parchment, and placed within a box or tube of metal or wood with sliding clasp or screw lid. If the articles are liable to break, there must be some elastic packing between the inner package and the box or tube in which it is mailed. There are other portions of the regulations which apply to articles which have no special interest to physicians or druggists.

The law will, therefore, permit any ordinary liquids (not ethereal or inflammable) being sent by mail to any post-office in the United States when put up with such care as will prevent their breakage.

CINCHONIDINE IN QUININE.—Recently the well-known quinologist, M. de Vrij, has brought to prominent notice the fact that large quantities of cinchonidine salts were present in some brands of foreign quinine, and his assertions, as contained in a communication made to the Pharmaceutical Society of Paris, caused it to take special action in the matter. A committee was appointed to investigate the facts, and recently the chairman, M. Jungfleisch, presented his report, which fully substantiates the claims of M. de Vrij.

The statement of M. Jungfleisch is that he found market samples which contained 8, 10, 12, and 16 per cent. of cinchonidine. Quinine containing this salt was much more bulky—in fact, it is asserted that all the *light* bulky quinine of commerce is of this characteristic, viz., containing cinchonidine. He, therefore, advises that *all light quinine should be rejected*, and contends that *no pure quinine sulphate* can be made having the character of unusually light bulk. Of the intimate connection of these two alkaloids it may be said that their pre-existence together in some barks makes it a difficult matter to separate them at times, and some samples of cinchonidine contained as much as 10 per cent. of quinine.

WHAT NEW YORK DRINKS.—A recent official report by the New York health authorities states that the Croton water-shed embraces 239 square miles, and has a population of 20,000, with 1879 dwellings and as many privies, about as many barnyards, pig-pens, and cesspools, besides cemeteries, graveyards, slaughter-houses, and other sources of contamination, *and with no drainage except by the surface*, which conducts it to the aqueduct. Yet the Croton is the best water supply enjoyed by any large city in America or elsewhere!—*Sanitary Era*.

PRESERVATION OF FRESH FISH.—Of late years we have been accustomed to associate economy in the preservation of food with colonial or transatlantic enterprise. It is, therefore, the more encouraging to learn that Europe is equal to inventive progress in the same direction, and of this we have apparently a genuine proof in the method of preserving fresh fish introduced by Mr. August R. Roosen, of Hamburg. By his process, which is a simple one, the fish when caught are enclosed in steel barrels, each capable of accommodating 300 pounds weight, immersed in a three per cent. antiseptic solution of boracic acid, tartaric acid, and salt in water, which is forced in by means of a hydraulic hand-pump, while air is simultaneously expelled. An air-tight lid

closes the cask, and the bung-hole is a valve to which the pump is attached when in action, and which at a certain stage is closed by internal pressure. It is also satisfactory to find that a year's experience has proved its practical efficiency, at all events in the hands of the introducers. Meat is stated to have been preserved by the same process. On board of the larger fishing craft the plan appears likely to answer well. One or two points in connection with its working will require careful regulation. With regard to the water in which the antiseptics are added. If this is to consist of sea-water, as might naturally be expected, it will still be necessary for coast fishers to be careful as to its purity from river or port refuse. It will also be necessary to guard against the overcrowding of fish. If this should happen, even powerful antiseptics will be of little avail, since perfect exclusion of air is hardly possible. We hope that future use will justify the promise of this novel and ingenious experiment.

REVOLVER BULLET LODGED IN THE BRAIN; RECOVERY.—At the Society of Surgery of Paris, on May 26th, M. Prengueber presented a man who had fired a revolver at the middle of his temporal fossa. The ball, seven millimetres in diameter, lodged in the brain. The three days following the accident the surgeon abstained from interference, as the only symptoms were general prostration with lowering of the temperature. Epileptiform attacks having occurred on the fourth and fifth days, M. Prengueber exposed the cranial wound and removed several bony spicules, which had penetrated the brain. A stilet having failed to detect the bullet, though passed along its course to a depth of five centimetres, nothing else was done. The epileptiform seizures did not recur, and the patient left the hospital at the expiration of a month without any cerebral complication.

MUNICIPAL LIBERALITY.—At its sitting of July 31st, the Municipal Council of Paris voted a credit of 289,765 francs (L11,590) for the construction of a new surgical department at the Hôpital Cochin, to replace the wooden huts erected during the siege. It is intended to provide for all the requirements of modern surgery, with laboratory, means of isolation, etc.

MEDICO-LEGAL LABORATORIES IN SPAIN.—The Spanish Ministry of Justice has arranged for the establishment in Madrid, Barcelona, and Seville, of laboratories of forensic medicine. After the middle of September, analyses which may be ordered by magistrates will be conducted in the new institutions—a provision enabling experts nominated in the interests of accused persons to be present during the performance of such analyses.

A USEFUL PLANT.—Dr. Brandes, a Hanoverian physician, has recently demonstrated in a German contemporary the valuable properties of the anacharis alsinastrum, a water-plant which has hitherto been considered as an unmitigated nuisance, choking up rivers, and altogether useless. Dr. Brandes has remarked that in the district where he lives, and where malaria and diarrhoea yearly appeared in a sporadic or epidemic form, those diseases have gradually decreased since the anacharis alsinastrum began to infest the neighboring rivers and marshes, and for four years have

totally disappeared. He therefore proposes that the plant, which came originally from Canada, should be planted in marshy districts, with the view of checking malaria; and the experiment, in view of the evidence adduced in the article under notice, is certainly deserving of consideration.

NEW JOURNAL.—The first number of *The Review of Experimental and Therapeutic Hypnotism* has appeared in France. It is edited by M. Edgard Berillon, with the collaboration of Barety, de Beauvais, Bernheim, Fränkel, Guys, P. Maginn, Aug. Voisin, and others.

DEATH OF PROF. MAAS.—The death, at the age of forty-four, is announced of Dr. Hermann Maas, Professor of Surgery in Würzburg.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT OF THE U. S. ARMY, FROM AUGUST 17 TO AUGUST 23, 1886.

BAILEY, J. C., Major and Surgeon.—Granted one month's leave of absence.—*S. O. 111, Division of the Atlantic*, August 17, 1886.

BENTLEY, E., Major and Surgeon.—Granted one month's leave of absence, and at its expiration to report for duty as Post Surgeon at Little Rock, Ark.—*S. O. 113, Division of the Atlantic*, August 18, 1886.

LORING, L. Y., Captain and Assistant Surgeon.—Leave of absence granted him in *S. O. 59*, August 2, 1886, Division of the Pacific, extended two months, on Surgeon's certificate of disability.—*S. O. 189, A. G. O.*, August 16, 1886.

TAYLOR, B. D., Captain and Assistant Surgeon.—When relieved by Surgeon Bentley, to proceed to Jackson Barracks, La., and report for duty as Post Surgeon.—*S. O. 113, c. s., Division of the Atlantic*.

HOPKINS, WM. E., First Lieutenant and Assistant Surgeon.—Assigned to duty as Post Surgeon at Angel Islands, California.—*S. O. 61, Division of the Pacific*, August 6, 1886.

BORDEN, WM. C., First Lieutenant and Assistant Surgeon.—Assigned to temporary duty at Fort Boidger, Wyoming, during absence of Assistant Surgeon Crampton.—*S. O. 100, Department of the Plate*, August 9, 1886.

WALES, PHIL. G., First Lieutenant and Assistant Surgeon.—Relieved from duty in Department of the Columbia, and to report in person at Headquarters Division of the Pacific for further orders.—*S. O. 62, Division of the Pacific*, August 9, 1886.

MASON, CHAS. F., First Lieutenant and Assistant Surgeon.—Assigned to duty as Post Surgeon at Plattsburg Barracks, New York.—*S. O. 113, Division of the Atlantic*, August 18, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 21, 1886.

STONE, DR. E. P.—Commissioned an Assistant Surgeon in the Navy, August 5, 1886.

WENTWORTH, A. R., Assistant Surgeon.—Ordered to temporary duty at Navy Yard, League Island, Pa.

LIPPINCOTT, G. C., Passed Assistant Surgeon.—Ordered to Annapolis, Md., for temporary duty as member of Medical Examining Board.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course, not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.